THE ENGINEERING AND MINING JOURNAL AND COAL

(Published Every Saturday at 253 Broadway, New York.)
Entered at the Post-Office of New York, N. Y., as Second Class Mail Matter.

VOL. LXXI. JANUARY 26, 1901. No. 4.

RICHARD P. ROTHWELL, C. E. M. E., Editor.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
THE SCIENTIFIC PUBLISHING CO., Publishers.

Copyright, 1901, by the Scientific Publishing Company.

SUBSCRIPTIONS ARE PAYABLE IN ADVANCE. For the United States, Mexico and Canada, $5 per annum; all other countries in the Postal Union, $7.
REMITTANCES should be made by bank drafts, post-office orders or express money orders on New York, payable to the Scientific Publishing Co.
When change of address is desired, both old and new address should be sent.
NOTICE OF DISCONTINUANCE. The JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received by us. We find that a large majority of our subscribers prefer not to have their subscriptions interrupted and their files broken in case they fail to remit before expiration. It is therefore assumed, unless notification to discontinue is received, and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. PAPERS RETURNED ARE NOT NOTICE OF DISCONTINUANCE.

Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,095 Cortlandt.

New York Cable Address—"ROTHWELL." (Use McNeill's or A B C 4th Edition Code.
London Cable Address—"PULCINETTO." " " "

Branch Offices: Chicago, Ill 737 Monadnock Building, Phone 73 Harrison.
Denver, Colo., Boston Building, Room 206.
Salt Lake City, Utah, Atlas Building.
San Francisco, Cal., Third Floor, Mills Building.

Vancouver, B. C., Office, Molson's Bank Bldg. Wm. M. Brewer, Manager.
London, Eng., Office, 20 Bucklersbury, 368. E. Walker, Manager.

English subscriptions to the JOURNAL may be paid at the London Office at the rate of $7 = £1 8s. 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s. 2d. to the dollar, net.

CONTENTS.

	Page
Editorial Notes	111
The New Texas Oil Fields	112
The Commercial Movement of Silver	112
New Publications	113
Books Received	113
Correspondence	113
*The New Texas Oil Fields	115
Richmond Meeting American Institute of Mining Engineers	115
The Marble Industry of Carrara, Italy	115
The Makum Coal-Field in Assam.....George E. Harris	116
*Gold Mining Developments in Georgia.....Prof. Wilber Colvin	117
Gold Dredging in California.....Thomas J. Barbour	119
The Bora Creek Silver District, New South Wales	121
British Coal Exports	122
*The Wyckoff Wood Pipe for Mining	123
*A Double Gasoline Hoist	123
Recent Decisions Affecting the Mining Industries	123
Mineral Collectors' and Prospectors' Column	124
Questions and Answers	124
*Patents Relating to Mining and Metallurgy	124

*Illustrated.

Personal..... 126
Obituary..... 126
Societies and Technical Schools..... 126
Industrial Notes..... 126
Trade Catalogues..... 127
Machinery and Supplies..... 127

Mining News.

United States:
Arizona 127
California 127
Colorado..... 127
Idaho..... 128
Michigan..... 128
Minnesota 128
Missouri..... 129
Montana 129
New Mexico 129
North Carolina.. 129
Pennsylvania.... 129
South Dakota.. 130
Texas..... 130
Utah 130
Washington..... 130
West Virginia.. 130
Wyoming..... 130

Foreign:
Australasia..... 130
Europe..... 130

Markets.

Coal:
New York..... 131
Birmingham . 131
Chicago..... 131
Cleveland..... 131
Pittsburg..... 131
Foreign Coal Markets 131

Slate:
New York..... 131

Metals

Iron:
Pig Iron Production..... 132
Birmingham.. 132
Chicago..... 132
Cleveland..... 132
Philadelphia.. 132
Pittsburg..... 132
New York..... 133

Gold and Silver Prices, Statistics, Imports and Exports 133
Foreign Coins. 133
Copper..... 134
Tin..... 134
Lead..... 134
Spelter..... 134
Antimony..... 134
Nickel..... 134
Platinum..... 134
Quicksilver... 134
Minor Metals. 134

Chemicals and Minerals:
New York..... 135
Liverpool..... 135

Mining Stocks.

Market Reviews:
New York..... 135
Boston 136
Salt Lake City 136
San Francisco 136
London..... 136
Paris..... 136

Meetings..... 136
Dividends..... 136
Assessments. .. 136

Stock Quotations:
New York..... 137
San Francisco 137
St. Louis..... 137
Boston..... 137
Philadelphia.. 137
Salt Lake City 137
Toronto..... 137
Colo. Springs.. 138
Montreal..... 138
Mexico..... 138
Denver..... 138
Spokane..... 138
Paris..... 138
London..... 138

Mining Co's,
List of..... 139

Current Prices:
Minerals, Chemicals, etc..... 140

Alphabetical Index to Advertisers.....Page 20
Classified List of Advertisers.....Pages 14, 15, 16, 17, 29

The general opinion in London is that we shall see very few new companies floated for some time to come, as the new English company law has put a serious obstacle in the way. The promoters and vendors have to state in the prospectus what their profits are, a perfectly fatal provision from the promoter's point of view. Even the most respectable flotation involves the multiplication of the purchase price by three, before the property can pass from the original owner to the company. The margin partly goes to one and another, promoters or intermediaries, and partly to Stock Exchange firms, as inducements to create a market. What will happen when shareholders find that such large slices go to their advisers remains to be seen, but it is obvious that promoters and Stock Exchange men are not enamored of the new law. They threaten, therefore, to take up no new companies unless there is some amendment to the law.

The convention of soft coal miners in Ohio has instructed its representatives to the general convention to demand an increase of at least 10 per cent. in the mining rate for the new year, which will begin on April 1st. This seems to express the general opinion, and there is no doubt that the miners will ask for a substantial advance for the coming year. The general prosperity of the past two years, the heavy demand and generally higher prices of coal have produced a very general belief that the miners have not been receiving their share of the advance. To this feeling is to be added the impression produced by the result of the anthracite miners' strike, which has been very marked. The operators will certainly hesitate to grant an advance in the face of a falling market, so that a long controversy is certain, and a general strike is one of the possibilities of the coming spring. If no compromise is made and such a strike does come, the interests now concerned in the coal trade make it certain that the fight will be a stubbornly contested one.

The troubles resulting from the Austrian coal miners' strike last year led to a proposal to nationalize the coal mines, or at least place them under Government control. Various proposals were made and all were referred to a committee of the Landtag, which has now reported, outlining a bill. The committee does not accept Government ownership of the mines, but suggests—apparently as a compromise—that all the marketing of the coal should be in Government hands. The plan proposed is that mine owners must sell all the coal turned out to the Government at prices to be fixed by a commission or by arbitration. The Government is to sell the coal either directly through agents, or through middlemen of its own choosing. The proposed plan is likely to meet with much opposition, for even in Austria people do not like the idea of a Government monopoly of fuel.

A section of the proposed bill which is likely to meet with favor provides for better regulation of the mines and the use of modern appliances. This is likely to be adopted, especially as something like it was definitely promised to the miners when they returned to work after the strike.

The consolidation of the firm of M. Guggenheim's Sons with the American Smelting and Refining Company, which has been so long under discussion, is now completely arranged, and will probably be completed during the present month. According to the official statement the property turned over will include the smelting works at Pueblo, Colorado, Monterey and Aquascalientes, Mexico; the electrolytic refining plant at Perth Amboy, New Jersey; various interests in South America, and the working capital and cash assets of the concern, with $6,066,667 in cash. The payment for this property is $45,200,000 stock of the American Company, one-half common and one-half preferred. At current quotations this stock would bring in the market about $36,000,000, and the payment for the Guggenheim smelters, after deducting the cash and cash assets turned over, would amount to about $21,000,000. This ought to be a very satisfactory price to the sellers.

It is understood, however, that the members of the Guggenheim firm do not intend to withdraw, but that some of them will take an active interest in the management of the consolidated company. It is not probable that this will result in any change in the general policy of the company.

A bill is being prepared for the Minnesota Legislature that, if passed, will cause the resumption of the incomplete geological survey of the State, which has been permanently abandoned by the State University, under whose auspices all the work has heretofore been done. The bill creates a bureau of geology and natural resources under direct control of the State. The bureau is to develop and publish knowledge of the natural resources of the State so far as they are dependent on geological structure by these means: By investigating of soils, waters, building stones and stone for roads, by the exploration of the portion of the State hitherto unexplored, by the examination of kaolins, clays, limes, marls,

cements and brines, by an investigation of the artesian basins and description of the physiography. It also provides for the gathering of statistics and the publication of reports, the creation of a bureau and the selection of a State Geologist. It is a little odd that all the State geological work of Minnesota has been under the State University, and that the State has never had a geological bureau or a geologist, except as far as Professor M. H. Winchell, of the University, has so acted. His work has been of such importance and value that the idea that he was not supported directly by the State has never entered most people's minds.

Figures have been compiled by the Southern Iron Committee as to the shipments of pig iron made during the year 1900 from Alabama and Tennessee and from the Birmingham District alone. During the year there were shipped from Alabama and Tennessee furnaces 1,327,741 tons of pig iron and 88,950 tons of cast-iron pipe; of the pig iron 238,615 tons went to foreign countries. From the Birmingham District alone pig iron shipments during last year amounted to 817,972 tons, while of cast-iron pipe there were 29,114 tons. The Birmingham District shipped considerable steel also. The exports of cast-iron pipe were 9,700 tons. These figures show that the Birmingham District furnished a very large proportion of the pig iron exported last year; fully 30 per cent. of the iron made in the district was sent abroad. This result was secured in spite of the fact that the ocean tonnag eavailable for pig iron was rather less than in the preceding year. It must be remembered, however, that the position of Birmingham with relation to the cotton shipping ports, gives it peculiar advantages. It is owing to this fact that last year the average freight rate on a ton of pig iron from Birmingham to European centers was about $4.40. The rail rate from New York for the same time was over $5. It thus cost less to land Birmingham iron in Europe by way of a near-by Southern port than it did to carry it to Eastern centers in this country.

THE NEW TEXAS OIL FIELD.

As we have already noted, the new oil field in Southeastern Texas is likely to be an important one. The description of the Lucas well near Beaumont, which is given in another column, indicates that it is probably the first of a number, and there is promise of developments which will largely exceed those of the Corsicana District. Moreover the oil, so far as examined or analyzed, is a lighter oil than the Corsicana product and will give a considerable percentage of illuminating oil, but contains much sulphur, like the Lima, Ohio, oils. A prominent authority on petroleum comments on the discovery as follows: "Even if the percentage of illuminant should be small, the reduced cost at which it can be brought to the surface and marketed, as compared with that of the Eastern fields, will give it special advantages. The best information at hand gives the depth of the well at Beaumont as less than 1,000 ft., or about the same as the shallowest wells in West Virginia and Southeastern Ohio. The Texas operator will not encounter the rocky formations, and to start and complete a well will be a matter of a few days, instead of weeks or months. As to the area of producing territory in Jefferson County absolutely nothing is known. If one is to judge from the volume of oil that the initial well was capable of putting out, it would seem that a vast field existed in that locality. The absence of a strong gas pressure, the Guffey well having little or no gas, would be an argument in favor of a large pool or field. There, as in the East, it will remain a subject for the theorist to discuss until the drill has definitely settled the question, from which there will be no appeal."

This touches also on another point of importance, the ease and cheapness with which the oil can be marketed. A short and cheap pipe line will enable the producers to put their oil at tidewater, whence it can be shipped by vessel; and they will thus be entirely independent of any railroad rates or combinations. In short it looks very much as if the discovery would give rise to a new situation in the oil trade.

THE COMMERCIAL MOVEMENT OF SILVER.

The commercial movement of silver last year certainly does not indicate any reduction in the world's demand for the metal. With an output, which increased in the United States and was fully maintained in all the other important producing countries, there was no indication of an excessive supply. On the contrary the average price in New York increased steadily through the year, and the average quotation for fine silver in New York was 61.41 cents an ounce, as compared with 59.58 cents in 1899 and 58.20 cents in 1898.

The demand for silver in the industries and the arts was large, both in this country and Europe, as might be expected in a period of general prosperity. This had its effect, but the chief factor in maintaining the demand for the metal was the large quantity required for the East, as will be shown below.

While the United States supply is fast becoming the most important factor in the silver market, the clearest and best statistics of the movement of the metal are those kept in connection with the London market, and it is to them that we must chiefly refer. The production of silver from ores mined in the United States last year, as shown in the "Engineering and Mining Journal," January 5th, was 60,478,276 fine ounces, valued at $37,085,248; and in addition we made or refined from foreign—chiefly Mexican—ores and base bullion, 46,352,281 ounces, valued at $28,423,219. The total prepared for market in this country was therefore 106,830,557 ounces, valued at $65,508,462. During the year the total exports of silver from the United States were valued at $66,221,664; while the net exports, deducting imports in all forms, reached a value of $26,461,170. There was retained and used here therefore silver to a value of $39,047,292, or rather more than the production from our own ores.

The movement of silver through London above referred to, is shown in the following table, which gives the value, imports and exports for the year, compared with those of 1899:

	—Imports.—		—Exports.—	
Silver:	1899.	1900.	1899.	1900.
United States	£8,821,476	£11,459,612	£18,287	£28,661
Canada	.....	.....	40,144	45,914
Mexico and South America	1,054,161	489,767	180,035	103,713
European countries	2,517,453	1,087,858	5,088,676	1,971,304
Africa	109,516	129,077	582,693	747,003
Australasia	208,413	148,184	134,170	297,350
The East	473	931	7,742,829	10,075,442
Other countries	16,491	6,871	168,318	305,193
Total	£12,727,989	£13,322,300	£13,955,132	£13,574,580

If we examine first the table of imports, the most striking point to be noted is the large increase in receipts from the United States. The total in 1900 was greater than that of the previous year by 29.9 per cent.; and these receipts were 86 per cent. of the total, while in 1899 they formed 69.3 per cent. In part this gain is accounted for by the lesser receipts from Mexico and South America, but only in part. The proportion of Mexican silver which is refined in the United States and marketed by our refiners is continually increasing. The figures given above are another indication that the world is looking more and more each year to this country for its supplies of silver, and that the control of the silver market is passing—if it has not already passed—from London to New York. As a matter of habit and convenience shipments are made largely through London; but the supplies are from this country and the price depends largely upon the action of the American refiners.

Of the imports from European countries but little is to be said. As we have noted heretofore, this is largely an exchange movement, and does not come from producing countries, being in the long run nearly balanced by the exports. The receipts from Australia were small, and it is certain that last year a very large part of the output of the Broken Hill mines went to China directly, some also going to India. These Australian shipments are made on London account chiefly, but there is naturally a considerable saving in the direct shipment.

Taking the exports we find a comparatively small change in their total amount, the decreases in some directions being nearly balanced by the increases in others. In the exports to European countries the large decrease is explained chiefly by the fact that Russia, having practically completed its new issue of silver coins, took little of the metal for coinage in 1900. Russia has continued to use a large quantity of silver in China; but obtained supplies largely from Germany, with some from Australia.

The shipments to Africa, which showed last year an increase of 28.3 per cent., were chiefly to Egypt and the West Coast. It is somewhat curious that London should ship silver to Australia, which is an exporter of the metal; but in 1900 the exports of silver from London to Australasia were a little more than twice as great as the receipts from that country.

The most important question in the silver market is what the East will take; and its takings in 1900 were large. We give in the accompanying table the shipments from London to the East for the year, adding those direct from San Francisco, the value of the latter being expressed in sterling, so as to permit a better comparison:

	1899.	1900.	Changes.	Per ct.
British East Indies	£5,601,588	£7,315,758	I. £1,714,170	30.6
Japan	.....	89,800	I. 89,800	...
China	2,141,241	2,669,884	I. 528,643	24.7
Total	£7,742,829	£10,075,442	I. £2,332,613	30.1
China, from San Francisco	£1,615,413	£3,054,455	I. £1,439,042	89.1
Japan, from San Francisco	.....	16,540	16,540	...
Total from San Francisco	£1,615,413	£3,070,995	I. £1,455,582	90.1
Totals	£9,358,242	£13,146,437	I. £3,788,195	40.5
Approximate oz. fine silver	75,710,000	103,600,000	I. 27,890,000	36.8

This table shows that the East has been an extensive buyer of silver, and that China, India and Japan absorbed approximately 103,600,000 ounces, or nearly as much as was produced in this country, including that refined from foreign ores and bullion. In other words nearly all the silver produced in the United States and Mexico was required to meet the

demand from India and China alone. The causes for the increase in 1900 we have heretofore referred to—the necessity for new coinage in India and the peculiar condition of China and its trade, which required pay for Chinese exports largely in cash instead of goods. It must be remembered also that in addition to the silver shown in the table China took some from Australia and Germany also.

It is evident that the Eastern demand for silver is increasing and not falling off, and that it is likely to continue large for an indefinite time to come.

NEW PUBLICATIONS.

"Moody's Manual of Industrial and Miscellaneous Securities." First Annual Number, 1900. Edited by John Moody. New York; the O. C. Lewis Company. Pages, 1,108. Price, $10.

The compiler of this work has undertaken to do for industrial and miscellaneous securities what "Poor's Manual" has long done for railroad securities. The sections into which it is divided cover in order Government securities; electric and compressed air companies; iron and steel companies; textile manufacturing companies; miscellaneous manufacturing companies; mining companies; food companies; brewing and distilling companies; telephone and telegraph companies; water companies; miscellaneous companies. Articles on the corporation laws of several States are appended. The large number of companies about which information is given show that a great deal of labor has been spent on the book.

Some allowance must be made for the inevitable shortcomings of a first issue; but it is to be regretted that the section on mining companies is so imperfect as to be of little use. Only 198 companies in all are noticed, and the plan of selection is hard to understand. Thus we find among the chosen 198 such concerns as the Spenazuma, the Copper King of Arizona and the Joseph Ladue, while such companies as the Isabella, the Portland, the Mercur and many other well-known mines, are conspicuously absent. This section should be carefully revised for the next edition by someone who knows something of mines and mining companies.

Notwithstanding the defects the book contains a great deal of serviceable information, and we believe that it can be made a standard reference book with comparatively few additions and amendments. Those, however, are very necessary, and should be introduced at the earliest possible opportunity.

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"The Copper Handbook." Houghton, Mich.; Compiled and Published by Horace J. Stevens. Pages, 328. Price, in paper, $1; cloth, $1.75; morocco, $2.50.

"Fourteenth Annual Report of the Coal Mine Inspector of the State of Missouri." Charles Evans, State Inspector. Jefferson City, Mo.; State Printers. Pages, 202.

"State of Michigan. Mines and Mineral Statistics." By James Russell, State Commissioner of Mineral Statistics. Marquette, Mich.; printed for the State. Pages, 488.

"Tasmania. Report of the Secretary for Mines for 1899-1900." W. H. Wallace, Secretary for Mines. Hobart, Tasmania; Government Printer. Pages, 216; with maps and illustrations.

"The Progress of the Mineral Industry of Tasmania for the Quarter Ending September 30th, 1900." By W. H. Twelvetrees, Government Geologist. Hobart, Tasmania; Government Printer. Pamphlet; pages, 16.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

Mining in Colombia.

Sir: I have been at work in this section of Colombia—the Department of Antioquia—for 19 years, on placer mines. A great part of this section consists of gold-bearing gravel, and the principal industry is mining. The natives work in a small way, with bars and ground sluice, using the water near at hand only. Those who have money will not risk it in building ditches of any length, or fitting up the mines to work on a larger scale, and the poorer class only care to live from hand to mouth.

There have been several American companies started, mostly with big expectations, largely capitalized, with heavy expenditures, outside of what is actually invested in the mines; and because they have not had quick returns they have given up. Almost all English companies are doing well both in silver and gold, through patience and perseverance. There have been many prospectors who could not find rich creeks and places easy to work without money and have gone home disgusted. The old Spaniards took out from here what the early miners found in California, and after them came the present race, natural-born miners. The first thing the children learn is to wash out gold in a batea. On the other hand, the country is years behind the times, the great drawback being want of roads, of which there are none. After leaving the rivers, all must be packed on mules, over miserable trails. There has been a revolution going on now for over a year. This makes labor scarce, but otherwise does not affect foreigners, as the Colombianos do not interfere in any way with the person or property, if one does not mix in their politics. Food supplies are high in price, but not scarce as yet. Exchange is now 700, and has been over 1,000 in American and English gold, so that it is a good time to work mines. We now pay an ordinary laborer $2 per day in this currency, giving him food and shelter. The ration for a day is 1 lb. "dulci" (or sugar not refined), ½ lb. beef, 1 qt. corn, 3 oz. rice, 6 oz. beans, ½ oz. lard. With cook and helper in kitchen, this costs at present $1.50 currency per man. The labor is very fair, and the men, as a rule, very respectful. A good carpenter or blacksmith can be had for $4 or $5 currency per day and his food. The placers that I am now working—Senorita and La Loca—are spotted mines; in some parts they have paid as high as 1 lb. of gold per day of 24 hours. We have only worked off the top, leaving the blue dirt bottom, as it is mostly very hard, to be worked later. We have from 800 to 1,000 in. of water during the wet season, and with a reservoir about 300 in. in dry season. The wet season is supposed to begin in April and last to December or January. The rainfall averages 150 in. a year, has gone as high as 215 (perhaps more) and as low as 94 in. We have 150 to 200 ft. pressure, but could get as much more by a long string of pipe. To save the gold we use flumes 2 ft., 3 ft. and 4 ft. wide, in places. I am now using rock paving, as the lumber does not wear well for blocks, and they are quite expensive. The flumes are on a grade of 6 to 8 in.; under currents 12 to 14 in. for every 12 ft. Ordinary lumber for flumes will last about 4 years. This has to be sawed in the woods and packed out on the men's backs. It costs at present about $2 for a board 12 ft. long, 12 in. wide and 1 in. thick, delivered.

There are any number of quartz veins all through this district, which have never been prospected thoroughly. Although almost all the placer claims are taken up, it is not so with quartz, as very little work indeed has been done in this direction. I am now at work on a vein, which seems very promising; it is called Los Excavaciones, as the Spaniards or Indians did some work upon the surface in open cuts, and also sank to some 46 ft. It is a well-defined vein and has been traced for over 2 miles. In places it is 6 ft. wide; in others opens into 2 or 3 veins, from 2 to 4 ft. wide each, with many small stringers, some very rich. We have put up a wooden mill on the native plan with 9 stamps. It will crush 6 to 7 tons in 24 hours and it has paid $5 to $25 per ton in free gold 712 fine. The ore is not very finely crushed and the gold is saved in blankets. I am taking out mineral 50 ft. below the top of vein and have run in 180 ft. The rock on one side is hard granite and the other side very soft. We use very little powder, as in parts the ore is rotten and crumbly. I am running a crosscut tunnel to tap the vein 120 ft. lower. This will require 204 ft. of tunnel through very hard rock, granite, and have 60 ft. now done. Over 100 ft. more mineral can be got before reaching water, by a much longer tunnel. We have water for several mills. There is timber in plenty on the ground and good facilities for fitting up on a large scale, which I expect to do soon. These mines are about 30 miles from Zaragoza, but a good road can be made to the river, 18 to 20 miles, to bring in machinery, etc. We are 1,200 ft. above sea level, a good and healthy, though tropical, climate, 85° to 100° in the shade the year round; but generally a good breeze and cool nights. It is a fine country, but no place for a poor man to come to at present with the expectation of picking up gold or fining very lucrative employment. Before the war steamboats came from Barranquilla to Zaragoza once or twice a month. The Atlas Line steamers run from New York to Barranquilla.

Robert Farley.

Zaragoza, Colombia, Nov. 19, 1900.

The Mineral Resources of Washington County, Missouri.

Sir: In the comments upon the prospectus of the American Lead and Barytes Company in the issue of the "Engineering and Mining Journal" of December 22d, page 734, an erroneous impression is conveyed as to the value of the mineral resources of Washington County, Missouri, where the company in question has acquired a large extent of mineral land. It is not my purpose to indorse that company, with which I have no connection and concerning the financial exploitation of which I am ignorant, but merely to correct the unfavorable opinion as to the district which was expressed by implication at least.

The famous and highly productive disseminated lead deposits of Missouri are situated in St. Francois County, save those in the vicinity of Mine la Motte, which are further to the south. Washington County adjoins St. Francois County on the west. The disseminated lead deposits of the latter occur in the so-called "St. Joseph" limestone, which underlies the "Potosi" limestone. The Potosi limestone in St. Francois County has been largely scored away and the mineral deposits of the St. Joseph are found comparatively near the surface, generally at depths of 300 to 400 ft. In Washington County the surface rock is the Potosi limestone and the St. Joseph lies at a greater depth than in St. Francois County. The geologists—Winslow, Jenney, Clark and others—who have studied the region, are agreed as to this formation.

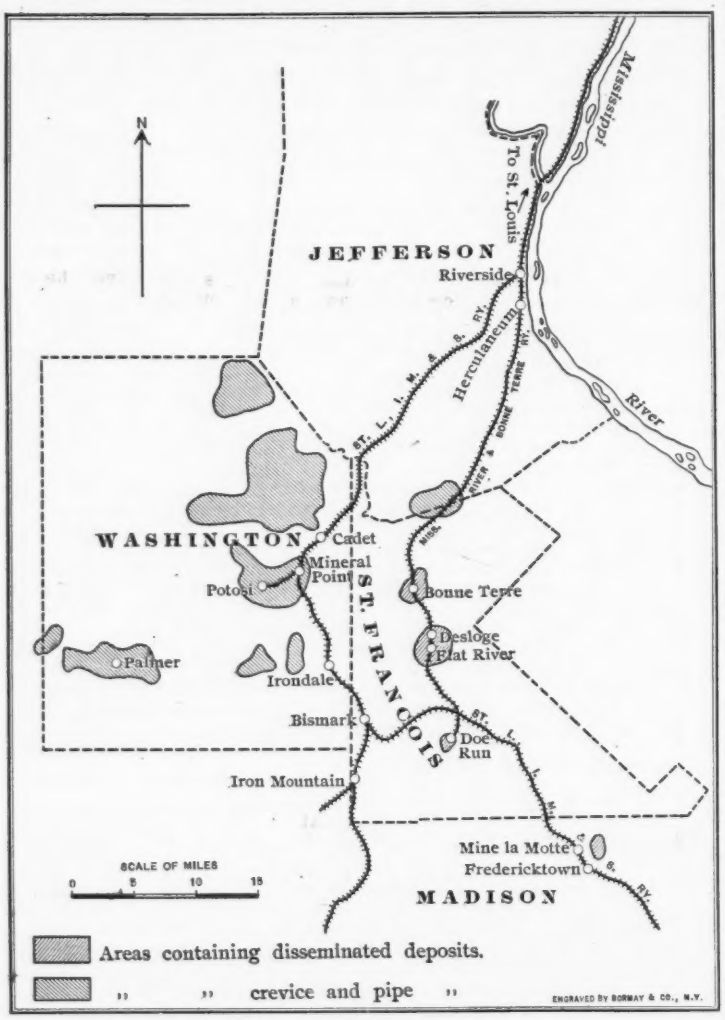
In St. Francois County the mining of the disseminated ore is carried on in two distinct areas, one in the vicinity of Bonne Terre (which was the first exploited), and the other in the vicinity of Flat River. A third district, namely Doe Run (about 5 miles south of Flat River), was formerly worked but is now regarded as exhausted. Whether these districts coincide with mineral zones having a certain trend cannot yet be pronounced definitely. Although they have been extensively studied by geologists in behalf of the United States Geological Survey, the Missouri Geological Survey and private corporations, there has been no attempt to correlate the various ore bodies which have been discovered, either with each other or with a well-defined fault system. The districts are therefore destitute of any reliable guides for exploration such as have been determined for some other mining districts, most remarkably for Leadville, Colo.

Galena has been mined for many years in Washington County and is mined there at present by numerous small concerns, the ore being obtained from pipe veins, lenticular sheets, stockworks and crevices in the Potosi limestone. The mining has been done in an unenterpris-

ing, uneconomical and unsystematic manner and there is reason to believe that these pipe veins, sheets, stockworks and crevices are capable of much greater production and profit than has heretofore been obtained from them. The success of the Renault Lead Company, which recently entered the field, is evidence in support of this idea. Barytes occurs also in the district, in connection with the lead ore, and is mined to the extent of about 15,000 to 18,000 tons annually,* but the market for that mineral is limited and there are no great possibilities in its exploitation in sight, at present at least.

The question of paramount interest in connection with Washington County is as to the existence in the St. Joseph limestone of disseminated deposits similar to those in St. Francois County. At present there is no positive evidence pro or con. Only a few drill holes have been put down to it and the fact that these have not discovered mineral is not proof that it does not exist, because there are many barren spots both at Bonne Terre and Flat River. Disseminated lead has been found, however, at Irondale in Washington County and the St. Joseph limestone appears at the surface for a considerable distance up the Big River into Washington County beyond Irondale.

The statement that the Bonne Terre and Flat River ore bodies are



SOUTHEASTERN MISSOURI LEAD FIELDS.

"very well defined and proven" is incorrect. It is only a few years ago that the only disseminated deposits in St. Francois County were thought to exist at Bonne Terre, where they were opened by the St. Joseph Lead Company about 1864, and the first ventures into the Flat River district in 1888-1890 were looked upon as "wildcat" schemes. The Central, Desloge and Doe Run properties, located there, became productive and profitable, and more recently the known extent of the district has been increased by the explorations of the Columbia, Federal, Union, Derby and other companies. Similarly in Madison County the Mine la Motte, near Fredericktown, has been a producer of lead for more than a century, but it is only within two or three years that anyone has had the courage to engage in systematic prospecting in that vicinity; the result has been the development of a promising new producer in the Catherine Lead Company. It is therefore improper to deduce the conclusion that the disseminated deposits do not extend into Washington County, because they are "very well defined and proven" in St. Francois, inasmuch as that premise is mistaken. On the other hand, Professor Wm. Bullock Clark is unwarranted in expressing the opinion that the Flat River and Bonne Terre mines are opened on mineral zones which trend toward Washington County, although it must be conceded that he is not alone among geologists who think that disseminated deposits exist in the St. Joseph limestone of that county and give plausible reasons for their opinions. The fact is that nothing definite is yet known as to the existence or non-existence of disseminated lead ore in Washington County. The question is to-day practically where it was in 1895, when Arthur Winslow wrote (Bulletin United States Geological Survey, No. 132, on "The Disseminated Lead Ores of Southeastern Missouri," page 29): "A glance at the map shows that all the deposits so far developed are beyond the areas of the Potosi limestone,* and drill men are of the opinion that the ore does not occur in disseminated form beneath that cherty rock. This may be the case, but the fact is hardly demonstrated yet, as inherent difficulties in drilling have prevented holes from being sunk through these rocks. If, however, it prove true that these great ore bodies as a whole are restricted to the country whence these upper rocks have been removed, or, in other words, where denudation and sub-aerial decay have been greatest, then this is a significant fact. It is in entire harmony with the writer's hypothesis of the origin of the ores." This is to say that the only scientific reason that can be assigned in support of the idea that disseminated lead ore does not exist in the Potosi limestone, is one that hangs upon a theory as to the origin of those ore deposits, which theory has not yet been proved. In this connection it is noteworthy that the Pim shaft of the Columbia Lead Company, recently sunk, which has discovered a great ore body, passed through Potosi limestone, and drilling on an adjacent property shows about 100 ft. of Potosi limestone—i.e., limestone with flint and "mineral blossoms" throughout it.

Professor Clark's report to the American Lead and Barytes Company is considered by those who are well acquainted with the geology of the Washington County lead deposits to be an accurate representation of the conditions thereof as shown by the present developments, although his opinion as to the probability of discovery of deeper, disseminated deposits is too optimistic. It appears to me conservative, however, to say that a mineral district which has known resources in lead and barytes that can be exploited profitably and has a possibility of discovering a disseminated deposit by systematic exploration with the diamond drill, is not a bad district for a prospecting venture. The price to be paid for a property within its limits is another matter. In expressing this opinion I have no particular reference to the property of the American Lead and Barytes Company; it applies to any property in Washington County that meets the conditions.

Walter Renton Ingalls.

Boston, Jan. 12, 1901.

*According to "The Mineral Industry," Volume VII., the production of barytes in Missouri in 1899 was 17,836 tons, all of which came from Washington County.

*That is, the areas now capped by the Potosi limestone.

RIVER RECORDS IN KOREA.—At the January meeting of the Engineering Association of the South, Mr. W. H. Holmes, an American engineer who recently returned from Korea, gave a description of the methods used in bridge pier and foundation work in Chemulpo. The system of keeping records of rivers there was briefly described. These records extend back for many centuries and are said to be very accurate. Mr. Holmes stated that where an opportunity offered itself for a check the records were in every case sustained. The record for the river in question extended back 509 years and explanation was made at the beginning of the records that the history of the river previous to that time had been consumed in a fire which had burned the house and all contents.

SHOP AND MILL VENTILATION.—The new shops of the Colorado & Southern Railway just completed at Denver, Colo., are noticeable for the introduction of many features conducive to the comfort and welfare of the workmen. Among these is a complete equipment for both ventilating and heating the entire plant by the blower system. Separate apparatus furnished by the B. F. Sturtevant Company, of Boston, Mass., consisting of fans and heaters are installed in the machine and car shops. Air distribution is secured through a complete system of galvanized iron piping. A clear atmosphere is also maintained in the forge shop by means of a large Sturtevant exhauster arranged to draw the smoke and gases from the eighteen special down-draft forges also furnished by the same company.

MINERAL IMPORTS AND EXPORTS OF SPAIN.—Imports of fuel into Spain for the 11 months ending November 30th, 1900, included 1,575,286 metric tons coal and 181,952 tons coke. Metal imports included 4,510 tons pig iron, 6,577 tons wrought iron, 45,503 tons steel and 2,216 tons tin plates. Exports for the 11 months are reported by the "Revista Minerva" as follows, in metric tons:

	1899.	1900.	Changes.	Per ct.
Iron ore	7,819,674	7,121,362	D. 698,312	8.9
Copper ore	863,979	936,978	I. 72,999	8.5
Zinc ore	87,229	52,276	D. 34,953	40.2
Lead ore	9,139	4,031	D. 5,108	56.8
Salt	313,910	193,927	D. 119,983	38.2

Exports of metals included 20,119 metric tons of pig iron (36,119 tons in 1899); 24,743 tons copper (26,299 tons in 1899); 142,488 tons lead, against 150,593 tons in 1899.

MAGNESITE IN INDIA.—The "Indian Engineer" says that there are large deposits of magnesite in Southern India, and Arbuthnot & Company, at their Madras Portland Cement Works, have for some time been experimenting with a view to producing a satisfactory white cement plaster having a magnesian basis. They have succeeded, and are now manufacturing a perfectly white cement for plastering walls which is cheap, easily applied and takes a polish like marble. It can be painted or colored by mixing coloring matter, and walls plastered with this cement dry so rapidly that in 48 hours or less rooms are ready for habitation. The finely polished surfaces can be easily washed down and from a sanitary point of view are perfect. The cement is practically as strong as Portland cement and can be moulded like plaster of paris. Arbuthnot & Company are introducing the manufacture at their Bangalore Works and also at Kallai, Calicut. A perfectly white cement plaster, with a marble-like polish, a vitreous stone-like strength, easily worked and cheap, suitable for indoor or outside work has probably a considerable future before it in India.

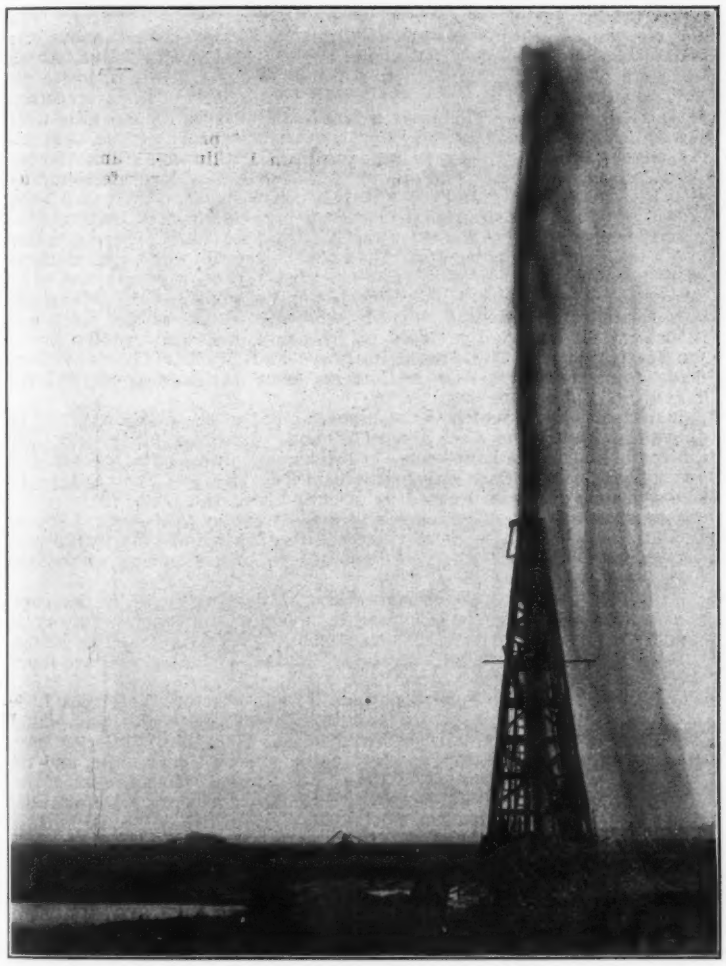
THE NEW TEXAS OIL FIELDS.

Specially Written for the Engineering and Mining Journal.

The oil production of Texas, which has been increasing for some years past, has heretofore been confined to the Corsicana field, and to a small field in the neighborhood of the old town of Nacogdoches. The new discovery recently made in the southeastern section of the State, not far from the town of Beaumont, promises to open up a new field of much importance. Some prospecting has been done in this section in previous years, but with no positive results.

Some two years ago Capt. A. F. Lucas, who was at one time connected with the Avery Island, Jefferson and other salt properties in Louisiana, began to prospect for petroleum in the neighborhood of Beaumont. He obtained oil leases on lands at Gladys City and other points, but did not meet with success. Finally he leased, several months ago, the rights on a tract of 5,000 acres belonging to the McFaddin-Wiess-Kyle Land Company, on which the new well is located. Messrs. J. M. Guffy and John H. Galey, of Pittsburg, were associated with Captain Lucas in the enterprise, and Hamill Brothers, of Corsicana, Tex., experienced borers, were engaged to sink the well.

The surface of the tract where the operations were conducted is marshy and level prairie, fit only for rice cultivation. The country rock is undoubtedly of recent Quaternary formation. Much difficulty was experienced in sinking through the water-bearing surface soils, but Captain Lucas finally adopted the system used by him in boring for salt



THE LUCAS OIL WELL, NEAR BEAUMONT, TEXAS.

in Louisiana, and described in a paper written by him for the American Institute of Mining Engineers. An abstract of this paper was published in the "Engineering and Mining Journal," November 11th, 1899, page 577. The casings used were heavy and were in succession 12 in., 10 in., 8 in., 6 in., and 4 in., each smaller pipe telescoping with the one above it. The lower or boring pipe, fitted with a cutting edge, was driven downward with a constantly revolving motion, while water was forced through by means of a circulating pump. In this way the borers were enabled to cope with the immense bed of quicksand, which had deflected the previous attempts—made in 1894, in 1896 and in 1898—to prospect for oil in the same locality.

At a depth of 1,300 ft. oil was struck suddenly and almost without warning. The 4-in. pipe in use, which weighed at least 6 tons, was forced to the surface by the sudden flow of oil, carried through the top of the derrick—which is 60 ft. high—and thrown up in the air a distance estimated at 300 ft. The tackle and the top of the derrick were carried away, while the pipe bent and curled up, falling to the ground clear of the derrick in a position where, fortunately, it injured no one. The water in the pipe, which was used in the hydraulic boring, was thrown up to a great height, followed by some gas and a steady stream of oil. This flowed with such force that large pieces of rock were carried up with it. The first flow was estimated at 250 bbls. an hour; it increased gradually to 500 bbls., and on January 13th was estimated at from 600 to 1,000 bbls. an hour, with the flow still increasing. At times the column reached a height of nearly 600 ft., and some observers, among whom were some employees of the Standard Oil Company, were inclined to think Captain Lucas too conservative, and to put the flow as high as 2,000 bbls. an hour. The accompanying photograph, for which we are indebted to the courtesy of Captain Lucas, shows the general appearance of the well.

The flow is at present entirely beyond control. Much oil, however, has been saved by running it into a natural depression of the ground near by, which covered nearly 50 acres, while the force of 300 men and 50 teams has been at work building levees and excavating reservoirs in which oil can be temporarily stored. As soon as possible tanks will be built and arrangements made to dispose of the oil. It will be a comparatively easy matter to build a pipe line to Beaumont or Sabine Pass, whence oil can be shipped either by rail or water. In fact there is no other oil district known in the United States where shipments to a market can be arranged so easily.

Hasty chemical examinations show that the oil is a light oil, having a paraffine base and containing some sulphur. It is believed that it will give a good percentage of illuminating oil; and it is of better quality than the Corsicana oil.

Naturally this strike has attracted much attention. People are flocking to the district, and oil leases on neighboring lands are in great demand. Other explorations, however, were already in progress. Mr. J. A. Paulhamus has been for some time engaged in putting down two wells near Taylor's Bayou in Jefferson County. The Sabine Oil and Pipe Line Company is putting up a rig 8 miles north of Beaumont. Many others will doubtless follow.

Credit is due Captain Lucas for his perseverance in prospecting, and for his ingenious adaptation of methods to the peculiar conditions of Southeastern Texas.

THE RICHMOND MEETING OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.

A circular just issued from the Secretary's office gives the following particulars in relation to the approaching meeting:

The Eightieth Meeting of the Institute (being the Thirty-first Annual Meeting) will be held at Richmond, Va., beginning Tuesday evening, February 19th, 1901. Communications concerning arrangements, excursions and hotel accommodations should be addressed to Mr. R. A. Dunlop, Secretary of the Chamber of Commerce, Richmond, Va., who is the Secretary of the Local Committee. Notices of proposed papers or contributions to discussions should be sent to the Secretary.

II. No special railway rates have been secured for this meeting. Richmond is directly accessible by the principal railway systems from all parts of the continent; and steamship lines direct from Boston, New York and Baltimore (via Old Point Comfort or Norfolk and Newport News) offer delightful variations to the overland trip, at extremely moderate rates.

III. The hotel headquarters, Bureau of Information, sessions, receptions, etc., will be at the Jefferson Hotel, which offers to members and guests of the Institute special rates.

IV. The following programme is provisionally announced. Further and final particulars will be given in the programme of the Local Committee, to be distributed to members upon arrival and registry.

Tuesday, February 19th, 1901.—At 10 a.m., headquarters will be open for registry, etc. At 9 p.m., opening session in the Jefferson Hotel, when addresses of welcome, etc., will be delivered, and President Douglas will give an illustrated lecture on the Paris Exposition of 1900. At 10 p.m., reception to members and guests of the Institute in the Jefferson Hotel.

Wednesday, February 20th.—At 10 a.m., session. At 2 p.m., visits to works, etc. At 8 p.m., session. At 10 p.m., concert in the Jefferson Hotel.

Thursday, February 21st.—At 10 a.m., session. At 2 p.m., visits to works, etc. At 8 p.m., subscription banquet at the Jefferson Hotel. Tickets for gentlemen, $7; ladies, $3 each—to be secured at the Bureau of Information immediately upon arrival.

Friday, February 22d.—At 9 a.m., excursion by special train, tendered by the Chesapeake & Ohio Railroad Company, to Charlotteville, University of Virginia, Monticello, the pyrites mines at Mineral, Va., etc.

Saturday, February 23d.—Local visits and excursions (particulars in the programme of the Local Committee). If any considerable number of members desire to spend Sunday at Old Point Comfort, special arrangements can be made, upon early notice given at the Bureau of Information.

THE MARBLE INDUSTRY OF CARRARA, ITALY.

In recent years the demand for Carrara marble has grown to large proportions, not only in European cities, but in the Western world as well, especially for ornamental and fine building purposes. This marble has a universal reputation for its color and fineness of texture, durability, economy in working, soundness and capability of receiving the highest polish. In the Carrara District there are now about 611 quarries, of which 345 are at Carrara, 50 at Massa—the two leading sections—and the remaining 216 quarries are located at Pietrasanta, Stazrema, Seravezra and Arni. Nearly the whole male population of these communes is engaged in the marble industry. The quarries are the property and under the direct control of the municipalities of the district in which they are located, and concessions to work them are granted by the syndic of the town. These concessions need only be renewed every 30 years, during which time the quarries are operated regularly at an annual rental of, say, $3 or $4. But the concession becomes void if the property is not worked or the rent paid in two successive years. Sometimes leases are sold or transferred, or left as an inheritance by the grantee without formal permission from the grantor.

Owing to the cheapness of labor, high cost of fuel, abruptness of ascent and consequent difficulty of access to many of the higher quarries for heavy machinery, fuel, etc., and other local causes, the quarrymen are operating in rather a primitive way. Then transportation

facilities were crude until 1876, when the quarry railroad at Carrara was partially built, being completed only in 1890. This road is 15 miles long and exhibits much engineering skill. It runs from the shipping point called Marina to Carrara, connecting at Avenza with the Genoa-Pisa-Rome line of the Mediterranean Railroad. From Carrara it makes the difficult ascent of the mountains, through many tunnels and over high viaducts, to a point some 1,500 ft. above the sea level. The road cost to complete about $4,000,000. Besides shipping by railroad, some quarrymen still use ox teams. Railroad rates vary from $1.16 to $1.81 per ton of approximately 14 cu. ft. for the haul to the Marina shipping port. Marina is on the sea 6 miles from Carrara, and has two large piers, which extend out into the sea, double-tracked and with hand-power loading cranes and a fleet of small sailing lighters that load the marble for Leghorn, where it is placed on the steamers for export. As Marina is exposed, it is impossible to load freight during bad weather.

In operating. the quarrymen usually blast out the rock in their quarries, which causes much waste and consumes months of time in drilling by hand the necessary holes for the powder charges. At a few quarries, however, the blocks of marble are sawed out by the use of an endless wire mounted on standards and pulleys, similar to the practice at some of our American quarries. In blasting very large masses of marble are often taken out with one charge of powder; then comes the slow and tedious process of moving this mass into position to be sawn into marketable sizes. This sawing is done by hand power also; a single, narrow iron blade fitted into a large wooden frame and operated by two men, one at each end of the frame, with the aid of water and sharp sand, accomplishes the work. Where the quarries are high above the railroad the blocks of marble are placed on skids and lowered down the sides of the mountain by ropes and slings to the loading docks. Here the loading is done entirely by rollers, skids and crowbars, although it would seem that derricks would be most serviceable. Blocks intended for sawing are sent to the local mills, while those for export are shipped to the Marina.

The labor employed varies with the season. At Carrara and Massa, where 7,622 men were at work in 1899, the daily wages were as follows: Quarrymen, 38 to 77c.; mill men, 38 to 48c.; cutters, 38 to 68c.; polishers, 38 to 68c.; carvers, 58c to $1.54; sculptors, 77c. to $1.93. As compared with the wages paid in the United States these figures are extremely low. At Carrara there are 158 firms or corporations engaged in quarrying; 38 mill owners; 68 exporters; 60 manufacturers and statuary dealers. There are 69 sawmills here, with a total of 310 gangs and 30 rubbing beds, the power being furnished by a small mountain stream from the valleys above.

The total shipments of the Carrara District in 1899 were 204,813 tons, valued at $3,475,000, of which the United States received $557,234, or 16 per cent. In ten years from 1890 to 1899 the shipments were 1,615,579 tons, valued at $27,382,500, of which the United States took $5,730,714, or 21 per cent.; Italy, $5,476,500, or 20 per cent.; United Kingdom and Colonies, $4,107,375, or 15 per cent.; France, $3,559,725, or 13 per cent.; Germany, $2,190,600, or 8 per cent.; Spain and Portugal, $1,369,125, or 5 per cent.; other countries, $4,949,461, or 18 per cent.

A fair estimate of the average cost of producing per cu. ft. of marble is about as follows: Hauling to Marina by quarry railroad, 11c.; municipal toll, 2½c.; dressing blocks at Marina, 3½c.; loading on lighters at Marina, 2c.; lighterage to Leghorn, 12c.; cost of quarrying, 50c.; total, 81c. per cubic foot. The municipal toll given is on block marble, while on sawed slabs the rate is 7c. per ton, or ½c. per cubic foot. Manufactured marble, statuary and the like are exempt from this tax. The selling prices depend a great deal on the color of the marble, its quality, etc. The ordinary varieties are quoted from 97c. to $1.60 per cubic foot f. o. b. Leghorn; the finer grades of statuary blocks from $3.50 to $7. A variety known as "Bianco P.," a fine white grade without veining, the best of which is produced at the Massa quarries, sells at from $1.80 to $4. The finer grades of colored marbles sell as high as $7 per foot. Many varieties of colored marbles are also found on the mountains surrounding Carrara. Two varieties of blue, dove-colored marble, known as "Bardiglio" and "Pavonazro," are well known in the United States, the latter especially being largely used and commanding a high price. Some new and very beautiful fancy marbles have recently been discovered near the village of Gragnana and Castelpoggio, north of Carrara. In the vicinity of Castelpoggio, a very fine variety of red marble is quarried. Some varieties of the well-known black-and-gold marble are found at Monte d'Arni and Foce, near Carrara. It is similar to that found at Porto Venere, in the Gulf of Spezia, having a densely black ground crossed in all directions by yellow veins. Besides these colored marbles, some fine onyx has been discovered at Monte d'Arni. These quarries are not now in active operation, it being found unprofitable to work them under present conditions.

Interest attaches to these Carrara quarries at the present time on account of the reports that the Vermont marble syndicate, at the head of which is Senator Redfield Proctor, is negotiating for the purchase of leases which will carry with them substantial control of the Carrara marble industry.

THE MAKUM COAL-FIELD IN ASSAM.*

By George E. Harris.

The existence of coal in Assam was first reported in 1825, and small quantities were mined as long ago as 1840. The Geological Survey of India made an examination of the fields in 1874-75. Nothing, however, was done in Makum except on a very small scale until the advent of the Assam Railways and Trading Company, Limited, which, in 1881, was formed in London, to make a railway about 70 miles long from Dibrugarh, an important town on the Brahmaputra, to tap the Makum field. A concession of 30 square miles was granted to explore and open out the coal-field, which included the workings of the oil (known to exist since the time that coal was discovered), brickworks, sawmills, etc. The railway, which is meter gauge, commences at Dibrugarh and runs to Makum Junction, a distance of 39 miles. Here it branches off in two directions, one branch of 16 miles going to Talup, connecting with extensive tea gardens, and the other branch going to Margherita, a distance of 23 miles. The track for 15 miles, until Digboi is reached, is through virgin forest. Margherita was the first clearance and settlement which the company originally made in the vast stretch of forest in which the Makum coal-field lies, and is situated on the Dehing River, about 2 miles east of Makum fort, and 62 miles from Dibrugarh by the railway. It is practically the center of the industries of the Assam Railway and Trading Company. Eight miles north of Margherita is the company's oil territory at Digboi, and 2 miles south is the Makum territory. Adjoining the station are the company's large sawmills, colliery workshops and refinery; 4½ and 6½ miles east of Margherita are the Tikak and Ledo collieries and brickworks, and southeast lies the Namdang Colliery.

The collieries are situated in the first spur of the Naga hills, in the Lakhimpur District. A good deal of coal and coke is sold locally, but the bulk is shipped at Dibrugarh, supplying the river steamers and tea gardens on the Brahmaputra. Some coal is also supplied in Calcutta to ocean-going steamers. The company's railway is the only one at present connected with the collieries, but the Assam Bengal Railway is likely to be connected shortly, and will undoubtedly afford a new outlet for Makum coal. Except where tea garden clearances have been made, the surrounding country is a dense forest and jungle. The south surface of the coal-field is undulating, the hills and valleys, with numerous mountain streams, forming a very picturesque country. The highest point at which coal is extracted is about 1,000 ft. above the plain. In the immediate background are the Patkoi Mountains, which enclose a pleasing panoramic view. On clear days, in the opposite direction, may be had an extensive view of miles of forest, interspersed with winding rivers. There are a few Naga villages on the hills near the collieries. Previously the Naga population was numerous, but on the advent of the railway a large portion of the population cleared away into the interior. The inhabitants of the immediate surrounding villages are friendlies, and more or less civilized. They are, as a race, incorrigibly lazy, having no industry of any kind. They cultivate, as a rule, sufficient grain for their own consumption. They are a hardy and strong race of people, but they do not care for work, and nothing will induce them to commence mining, consequently all labor has to be imported. A few of the local Nagas who are more civilized than the rest occasionally do jungle clearing. They are adepts at this work and their services are gladly employed by companies who require heavy jungle clearances. The Assam Railways and Trading Company have made four clearances and settlements near the mines—Margherita, Tikak, Ledo and Namdang.

Tikak settlement, which is the highest point of the outcrop, is 750 ft. above the plain. There are about 500 coolie miners at Tikak. At Ledo the coolie houses are built—some of brickwork, others on rail posts, and some have brick pillars only, with bamboo sides and thatched roofs. The settlement is well drained by a small river, the Ledo, from which the name is taken. There are about 1,200 coolie colliers in Ledo at present. In addition to these there are the brick and pipe works people, as well as others who are employed on miscellaneous works, the total population being about 2,000.

Namdang is the newest clearance and settlement made by the company for their colliery at Namdang, the first coal being sent away in 1897. There are at present about 400 coolie miners there. The houses are placed on a hill some 250 ft. above the mine entrance, and are much the same as those already described.

Collieries have been opened out east and west of the rivers Ledo Tikak and Namdang, and proved the existence of coal seams much thicker than were originally believed to be. The Ledo collieries have been driven out nearly a mile, Tikak colliery more than a mile, and the new colliery at Namdang more than half a mile. With the exception of a seam of coal 8 ft. thick, which has been worked at Upper Ledo colliery owing to the erosion of the thick seam, the only coal worked at present is that known as the thick seam. This valuable seam is in reality made up of three or four seams, aggregating about 50 ft. thick, and known as the top, middle and bottom coals.

The coal is an excellent steam coal, and undoubtedly the best found in India, its calorific value being considerably higher than any other known Indian coal. It cokes freely, the coke being of excellent quality. The seams are highly inclined, those at Tikak and Ledo being about 1 in 3 (19°), dipping southeast. At Namdang the seams are very steep, 45°. A peculiar feature of the coal is its fineness when extracted. On the whole it is fairly hard and compact, the roadways standing well, little timbering as a rule being necessary if the roads are not made more than about 6 ft. square, but in the broken a large portion of it breaks up into very small pieces, resembling fine slack. Owing to its cleanness and excellent coking qualities this is not of much consequence. It, however, causes a good deal of anxiety in mining, as fires from spontaneous combustion are very frequent. In addition to the coal seams already described, there is, in the plain, about half a mile north of the outcrops in the spur of the hills, another outcrop of the thick seam. The inclination is 45°, but the direction is northwest, or the reverse of the other seams. Between these outcrops is half a mile of undulating barren ground, the break being an anticlinal fault, which can be traced along the foot of the hills for some miles. A good deal of the outcrop of this latter seam was quarried by the company from 1884 to 1886, a thickness of 40 ft. having been proved. Owing to water in these workings they were abandoned directly the collieries in the hills had been opened.

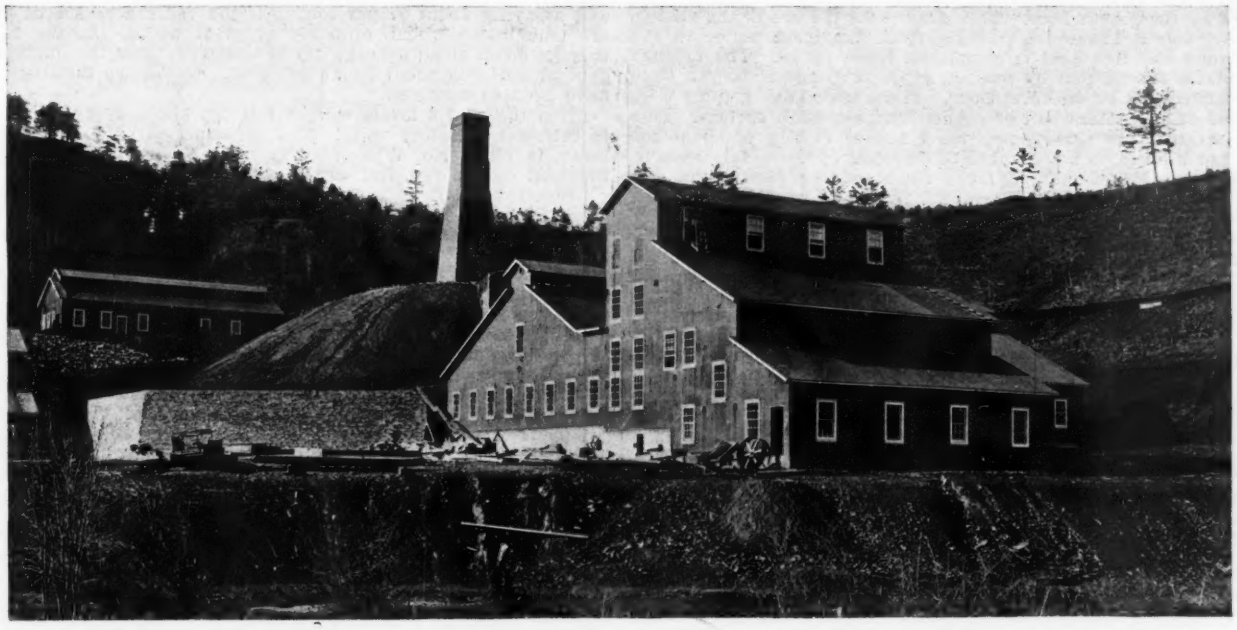
In 1885 the output of coal was 43,000 tons; 1890, 145,700; 1895, 173,500; 1899, 228,000 tons. The great drawback to enterprise in Assam is the scarcity of labor, the colony being very sparsely populated. Local labor is not obtainable, and it is therefore necessary to import coolies from the congested districts of Bengal, etc. The want of labor in Assam is seriously felt by all industries, and especially in coal mining.

* Abstract of a paper read before the Manchester Geological Society.

GOLD MINING DEVELOPMENTS IN GEORGIA.

Written for the Engineering and Mining Journal
By Prof. Wilber Colvin.

In a former article some account was given of the gold deposits and earlier mining operations of North Georgia. It is the purpose of this article to describe what is at present the largest gold mill of the Dahlonega, gold belt. There have been many small old-style stamp mills, some of them of very primitive construction, through this belt, nearly all built many years ago. It remained for the Dahlonega Consolidated Gold Mining Company to introduce into this mining region modern mining and milling processes, with a first-class mill and equipment. And this mill is one of the best appointed and equipped gold mills anywhere. It is the first systematic attempt at deep mining and intelligent milling in Georgia.

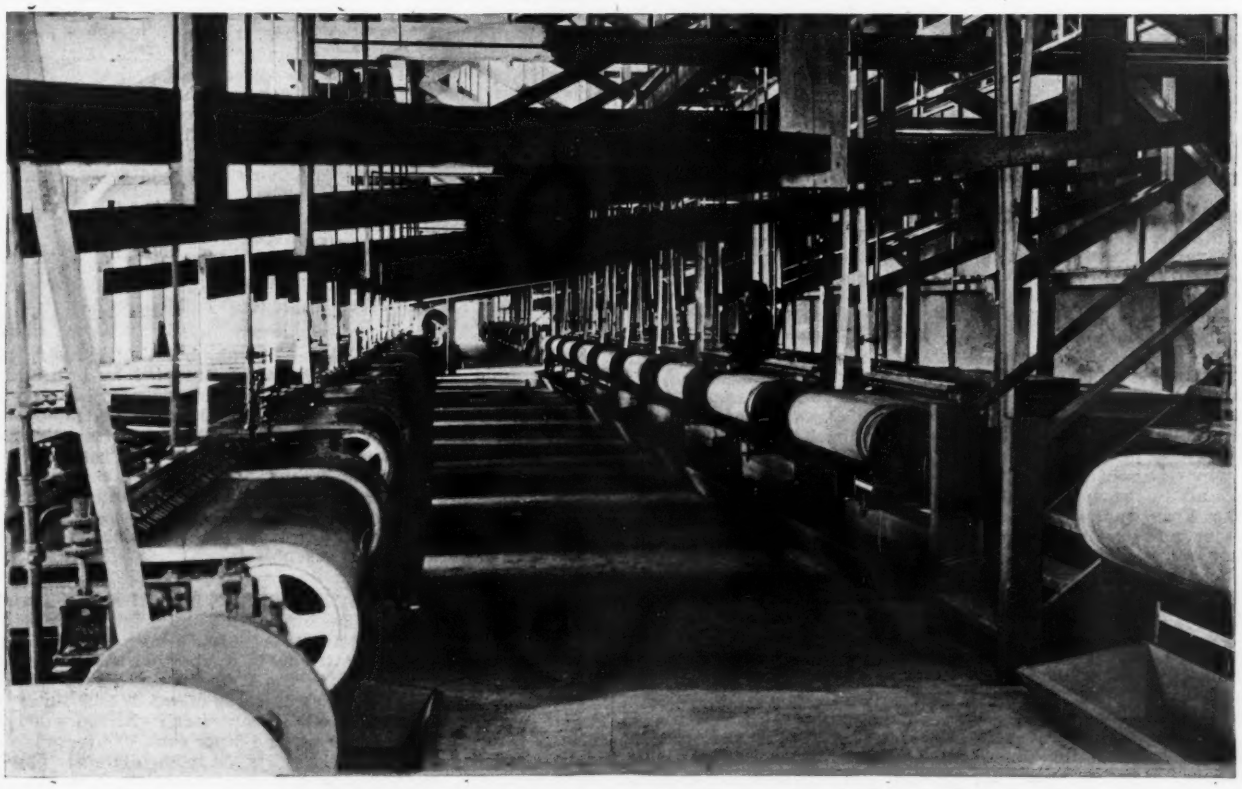


CHLORINATION PLANT, DAHLONEGA CONSOLIDATED MINING COMPANY.

The Dahlonega Consolidated Gold Mining Company was organized in November, 1898, by a number of Ohio and Michigan capitalists, although the father of the movement and now the president of the company, Capt. J. W. Adams, is of Chattanooga, Tenn. The capitalization of the company is $5,000,000. The company purchased about 7,000 acres of mineral land in and around Dahlonega, and in August, 1899, began the erection of its mill and accessories. The work was pushed with remarkable vigor and the mill was started May 1st, 1900.

It is 25 miles of mountain road to the nearest railroad station, and all of the machinery, some of it bulky and very heavy, and some of the building material had to be hauled this distance. Some of the pieces weighed several tons and required specially constructed wagons, drawn by 18 to 20 mules, for transportation. It required about 1,000,000 ft. of lumber to build the plant, and 75 car-loads of machinery to equip it, all aggregating about 7,000,000 lbs. in weight; but it was all successfully delivered and placed, and the mill built and put into operation in a little over eight months. All this cost over $500,000.

The buildings consist of a stamp mill 300 by 100 ft. and four stories high; a chlorination plant 128 by 128 ft. and four stories high; a store house and assay laboratory 84 by 36 ft., one story; a blacksmith and machine shop 84 by 36 ft., one story. All of these are substantially constructed and are covered sides and roof with No. 24 corrugated iron plates. There are also two shaft houses completed, each 120 by 40 ft. and two more of about the same size are nearly completed. The plant is situated within the corporate limits of Dahlonega, not quite a mile from the center of the town. It is on a steep hillside, on the banks of the Yahoola River, and within a few hundred feet of a network of veins of gold ore.



FRUE VANNERS IN MILL OF DAHLONEGA CONSOLIDATED MINING COMPANY.

The stamp mill has 120 stamps, each of 850 lbs. weight, arranged in batteries of 10 each. These stamps fall a distance of about 9 in. at the rate of 90 per minute. The mill has a capacity for crushing 600 tons of ore per day of 24 hours. It is equipped with 48 Frue vanner concentrators.

Adjacent to the mill on the upper hillside is an ore bin 300 by 60 by 22 ft., with capacity for 27,000 tons of ore. From this bin the ore is fed into the large crusher, a No. 6 Gates. A smaller crusher near the large one reduces any pieces that fail to pass the screen. An endless-belt bucket hoist carries the crushed ore to a horizontal wide endless belt on the fourth floor. This distributes the ore to the stamps on the third floor. These are provided with amalgam plates in the usual way, and the free gold is caught on these plates. The tailings from the plates are carried by wooden pipes or conduits to the Frue vanner concentrators on the first floor. These each have a table 6 by 13 ft. formed of an endless belt of rubber with egg-shell surface. This belt, as it rotates very slowly, receives a lateral motion of about 200 vibrations per minute, and a number of tiny jets of water fall upon it. The concentrates are caught in large boxes on the floor under the vanners. The remaining tailings are washed down into the basement and thence through underground conduits into the Yahoola River.

The concentrates are then carried on wheel-barrows or trucks to the chlorination plant about 100 ft. from the stamp mill and connected with it by an enclosed passage way. On reaching the chlorination plant the concentrates are dumped through a hopper into the roasting furnace. This is of brick and iron, is 100 ft. long, 14 ft. wide and about 9 ft. high, and is on the ground floor of a wing of the chlorination building. About 2½ hours are required for the ore to traverse this furnace. As it is slowly carried through on a moving floor the ore is constantly stirred by revolving rabbles carried along by an endless chain. This furnace is heated by four brick fireboxes using wood fuel. The iron flue chamber 6 ft. in diameter and 90 ft. long leads to a chute of masonry 45 ft. long, and it connects with the brick stack 66 ft. high. After a run all of the soot and ashes from these is carefully collected, as it contains gold, which is extracted easily. This furnace has a capacity of 30 to 35 tons of concentrates every 24 hours.

Beneath this furnace, and of the same length and width, is the cooling hearth on which the roasted ore is slowly carried back, being stirred by the same revolving rabbles and cooled meanwhile, to the hopper end. Here a screw-conveyor moves the ore about 20 ft. to an elevator that carries it to the storage bin on the fourth floor. Thence it is passed by gravity to the charge hopper and scales on the third floor, where it is weighed for charging the chlorination barrels on the second floor. These are charged with ore, water, sulphuric acid, and calcium chloride. There are two of these barrels, each of 5 tons capacity. They are of steel, lined with ½-in. lead, cylindrical, 5 by 8 ft., inside measurement, and are swung horizontally. When charged and sealed they are rotated at about six revolutions per minute for three to five hours.

The solution carrying the gold is then washed out of the barrels by hose attachments provided; but within the barrels are filters that retain most of the sand-pulp as tailings. This filtrate solution containing the gold passes into settling tanks on the first floor, where it remains about 24 hours. It is then conveyed by a Montjose air pressure engine into two precipitate tanks each 8 ft. cube, on the second floor, where jets of hydrogen sulphide are introduced at the bottom, under pressure, from a generator. This gas passing up through the solution precipitates the gold chloride. This precipitate is then filtered by air pressure, in the basement story, and the gold chloride is here caught on canvass and filter paper. It is then smelted, refined, and cast into bars. At the recent clean-up 54 lbs. of gold was the product, in value about $12,500. The time of the entire process for a given mass of ore is about 36 hours. This chlorination plant can treat 30 to 50 tons of concentrates per day.

The stamp mill is run by water power. The Hand Ditch, named for the man at the head of the mill for which it was constructed, conveys water from the Yahoola River to a reservoir on a hill near the mill; and under a head of 235 ft. the water is admitted through a 44-in. wooden tube, with pressure of about 100 lbs. per square inch, to two Pelton water wheels, each of 500 H. P., and each capable of running the mill. This water reaches the wheel through two nozzles of 2 and 2½ in. diameter at each wheel.

An air compressor of 200 H. P. is operated by this water power and it furnishes air to the drills in the mines. Two 40-H. P. water wheels operate the Frue vanner concentrators. Two dynamos are driven by the water power; one for operating electric lights for the mill, mines, plant and premises. The streets of Dahlonega and a number of business houses and private residences in the town are also electrically lighted by it. The other dynamo furnishes power for operating the ore tram cars and for running the chlorination plant.

The Hand Ditch, above mentioned, is itself a remarkable piece of engineering skill. It brings water from a point in the Yahoola River about 7 miles from Dahlonega. On account of the many ridges and ravines around and along which it must travel, its course is very sinuous and is nearly 20 miles long. This ditch was begun in 1859, but was not completed until after the War. Its construction cost over $300,000. It cost the Consolidated Company $20,000 to put it in good repair for present use. Its construction required the excavation of over 5,000,000 cu. ft. of earth and the blasting of thousands of tons of rock. The open part of the ditch is 6 ft. wide at the bottom, 10 ft. wide at the top, vertical depth 4 ft. In eight places it is carried across deep ravines, in some cases across streams, through inverted siphons made of iron tubes from 36 to 48 in. in diameter, and in spans of from 200 ft. to 3,840 ft. in length. The total length of this piping is 10,526 ft. Flowing at full capacity this ditch will discharge into the mill reservoir 4,000 cu. ft. of water per minute.

Most of the ore thus far has been obtained by working from the surface into the veins or by short horizontal tunnels into the hillsides intersecting the veins. But the plan now is to go deeper, and four vertical shafts are being sunk. Shaft No. 1, within 300 ft. of the stamp mill, is now down about 165 ft., and is going down at the rate of about 50 ft. per month. It has three compartments. The cage-way is 6 ft. square and the two side compartments are each about 5 ft. square. The hoist engine with a cable drum 5 ft. in diameter is operated by an electric motor capable of giving it a winding speed of 700 ft. per minute. It is the purpose to sink this shaft as rapidly as possible to a depth of 1,000 ft. It is near the Knight Vein, which is about 16 ft. in width, and gives an assay value of about $10 per ton of ore; and also it is close to the Prewitt Vein of about 14 ft. width and assaying about $7 per ton. All the veins here are of quartz and are true fissure veins, probably of great depth. So far as explored they go down at an average dip of about 60° from the horizontal. The general strike is about North 75° East. Numerous faultings, however, have been encountered.

From the shafts levels will be run out about every 100 ft. of depth to intersect the ore veins. The construction of the second of these levels in Shaft No. 1 has already been begun. The first intersected the vein only a few feet distant from the shaft.

Breymann shaft is of the same size as Shaft No. 1, and is now down 81 ft. It is 900 to 1,200 ft. from the stamp mill and will work the Antonio Vein, 22 ft. wide, giving an assay value of about $8 per ton of ore.

Tahloneka shaft has recently been started and is of the same size as the other two. It is 900 to 1,200 ft. from the stamp mill and will work the Singleton Vein, 10 ft. wide and assaying about $8 per ton of ore; also the Weaver Vein, which is 12 ft. wide and assays about $8 per ton, and the North Stratified Vein, 12 ft. wide and of about the same value as the other two.

The Mary Henry shaft, also recently begun, is 1,500 to 1,800 ft. from the stamp mill. It is upon the Lawrence Vein. This is a two-compartment shaft. This vein is about 4 ft. wide and assays an average of about $9 per ton of ore. These two latter shafts are on the property of the Standard Gold Mining Company, a newer company than the Consolidated, but both are under the same management and work together.

The ore from the shafts and tunnels is carried to the ore bin at the stamp mill by electric tram cars. The entire plant and premises, levels and shafts are lighted by electricity.

The plant has worked very satisfactorily thus far. It was built by experienced mill men from the West, and no expense or effort was spared to make it the best that experience could suggest. The property above described is only a part of that belonging to the Consolidated Company. Some of the property believed to be rich they have not yet touched. And also the Consolidated is only one of half a dozen or more concerns in the vicinity either now at work or preparing to work on a large scale.

The Standard Gold Mining Company, above mentioned, capital stock $5,000,000, owns 5,000 acres of excellent mineral property and is preparing to operate. The Crown Mountain Gold Mining and Milling Company, which owns what is reputed to be the richest ore in the belt, is building a large mill. This company is going to elevate sufficient water nearly 600 ft. to sluice down a mountain of ore. The water will be raised by electric power generated at falls in a river 12 miles away and transmitted by wire. The aggregate capital stock of the gold mining companies operating and preparing to operate about Dahlonega is over $15,000,000. And there is also much mining activity in adjoining counties. People are only just beginning to seriously consider the extent and value of the gold deposits in this region.

PENSION FUNDS AT THE KRUPP WORKS.—Herr Krupp, of Essen, has given $375,000 as a New Year's present to his employees. This generous gift has been apportioned as follows: $125,000 to the workmen's pension fund, $125,000 to build further workmen's dwellings, and $125,000 to the clerks' and other employees' pension fund.

SHIPBUILDING IN JAPAN.—The shipbuilding industry in Japan is making rapid strides. The total area occupied by both shipyard and engine works at Nagasaki already exceeds 60 acres, and this is being steadily enlarged. Considerably over 3,000 men are employed. Electric light is installed throughout the works, and it has recently been decided to use electricity as a motive power, two powerful generating plants being obtained for the engine works, and two smaller ones for the shipyard. Pneumatic plant is also to be introduced to a limited extent. At the time the report was written there were six steamers, aggregating 18,000 tons gross, under construction, two of which, of 6,240 tons gross each, were for the Nippon Yusen Kaisha.

CHARCOAL MAKING AT DESERONTO.—At the charcoal plant of the Rathbun Company at Deseronto, Ont., both kiln burning and retorting are practiced. There are 17 beehive kilns of red brick, 28 ft. in diameter and 20 ft. high. A tunnel in the bottom leads the vapors to the mains, which convey them to the copper tube condensers in the by-product plant. Each kiln holds 40 cords of wood, and burns three days. It is then allowed 10 days to cool. Imperfectly charred wood constitutes 10 to 12 per cent. of the product, and 5 per cent. of breeze is made. The retort plant contains 50 steel retorts, 50 in. in diameter and 9 ft. long, set in fire brick, cased outside with common brick. The charge for each retort consists of ¾ cord of wood, which is retorted in 24 hours. Each pair of retorts has a separate heating chamber. There is no imperfectly charred wood, but the percentage of breeze is about the same as in the kiln-charring. This is mixed with tar condensed from the vapors, and is used for heating the retorts in conjunction with the bases, which, after passing through condensers at the back of the retort block are tapped and led back into the heating chambers. The charcoal is drawn into steel cars and smothered down with steel covers. For the operation of this plant a total force of 18 men are employed. The by-product is of the ordinary sort, producing 400 gallons of wood alcohol and 2½ tons of acetate of lime per day of 24 hours.

GOLD DREDGING IN CALIFORNIA.*

By Thomas J. Barbour.

We find that dredging lands have been actively opened up in Siskiyou, Trinity, Yuba, Butte, Nevada, Shasta and Placer counties. In Siskiyou County a large plant has been in operation at Hawkinsville, near Yreka. They have been operating about 6 months, but we have been unable to secure data as to what they have been doing. Farther south, in Siskiyou County, on the south fork of Scott River, the Montesuma Company is opening up a large section of dredge land.

In Trinity County we have two companies, one operating at Lowden's Ranch, known as the Poker Bar Placer Mining Company, equipped with one 3¼ cu. ft. bucket dredge. They have about 1,000 acres of ground, of which from 300 to 400 acres has been prospected, and proves to be good dredging ground. They have been in operation since July 1st, 1898, and have handled 440,000 cu. yds. of gravel. They have worked approximately 15 acres of ground. The second company is situated near Weaverville, and is known as the Galvin Dredging Company. They are incorporated with $100,000 capital, and are equipped with one 3¼ cu. ft. bucket dredge, and have invested approximately $75,000 in their property, which consists of 321 acres of ground. The dredge has lately been completed and they expect to commence operations on December 1st.

This section of the country is one very favorably adapted to dredging. It is situated on Weaver Creek, half a mile from the town of Weaverville on the Trinity River. The bed rock is soft and the gravel fine. The mode of prospecting at that point is with the Keystone drill. The nature of the ground is exceptionally favorable for successful dredging, and the nature of the material should insure the maximum capacity of the dredging apparatus. The dredge is equipped with engine, lathe, power drill, blacksmith's outfit and machine shop. The Moore Gold Separator is used for cleaning up.

By far the most successful dredging field at present opened up in the State of California, is at Oroville, on the Feather River, in Butte County. Some 10 dredges are in operation at this section, and the dredging field commences immediately within the town limits of Oroville and extends some 6 miles south down the river on both sides for about 2 to 3 miles wide.

The first dredging ground is known as the Halstead Claim, owned by the Continental Dredging Company, of Boston. They have been operating for about 6 months, and, like all dredges in Oroville, have made a perfect success of their operations. Immediately below the Halstead is the Hendricks Claim, which is owned by Mr. John F. Newsom and associates, of Stanford University, and consists of 116 acres. Following down the river is a large section of ground owned by the Lava Beds Company, of which Mr. J. W. Goodwin, of 331 Pine street, San Francisco, is the president. This ground is admirably adapted to dredging, having soft bed-rock, access to plenty of water, and is equipped with one steam shovel dredge. This company has about 400 acres of ground, and it has been thoroughly prospected with Keystone drill. They have not yet run long enough to know just what capacity they will have, but it is estimated they will move 1,000 cu. yds. per day. Adjoining the property of the Lava Beds is a section of ground, known as the Yetter Ground, owned by the Feather River Exploration Company. This adjoins the section of ground owned by Mr. John W. Ferris, consisting of about 85 acres, and is equipped with the shovel dredge "Plutus." Mr. Ferris' investment is approximately $50,000. He has been working about 16 months, during which time he has worked 25,000 cu. yds. of gravel per month. Mr. Ferris has lately purchased an additional piece of ground adjoining his present property.

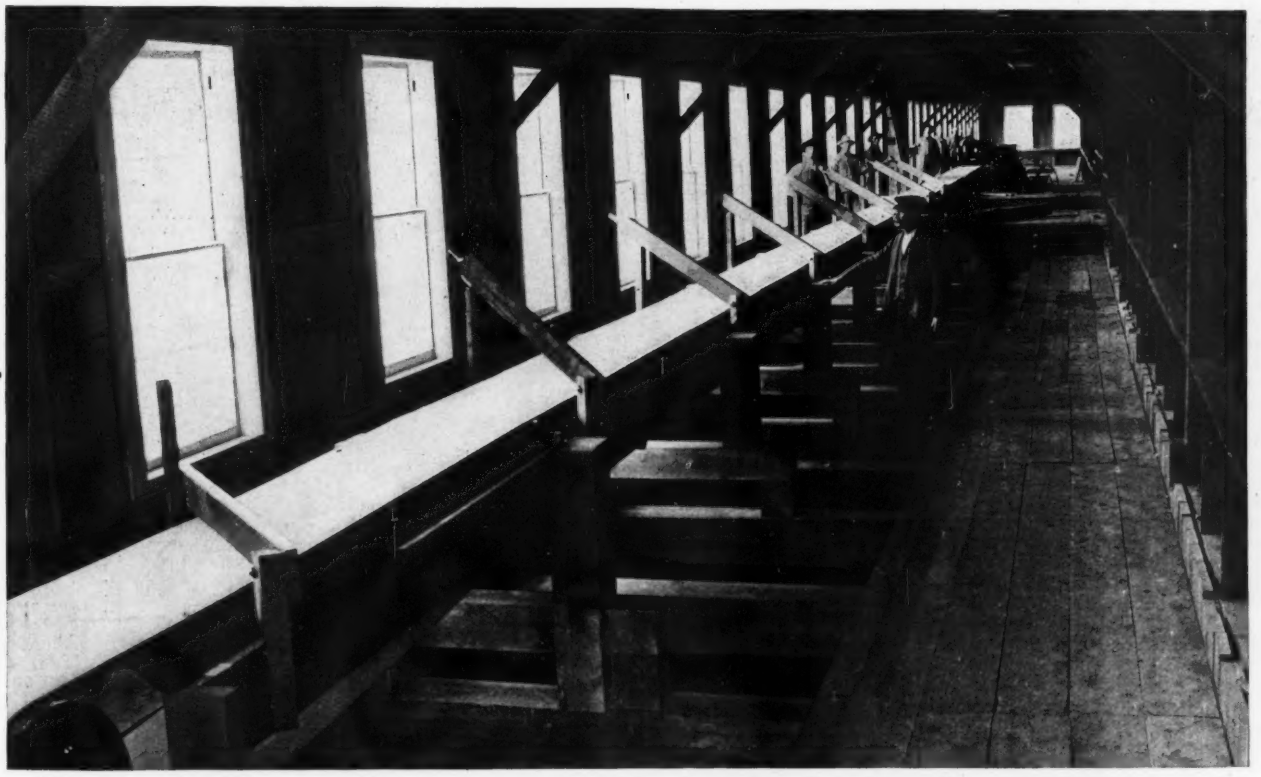
Next down the river we find the Marigold Gold Dredging Company No. 1 equipped with a 3¼ cu. ft. dredge, and immediately below is the Marigold Company No. 2, equipped with a 5-ft. dredge. Both dredges, as well as the other machines in the Oroville District, are now operated by electricity. The Marigold Company's investment is in the neighborhood of $175,000. They have a total of 450 acress of land. This company commenced to operate about 19 months ago, and has handled approximately 500,000 cu. yds., or approximately 15 acres of ground. Their average depth is, from surface to bed-rock, 21 ft. This amount is entirely handled by the 3¼ cu. ft. dredge, and the 5 cu. ft. dredge has only been operating a short time. For 3 months the dredge was laid up, owing to the change from steam to electricity. Mr. Bend Thomas, the manager of the Marigold Company, adds in his information to the writer as follows: "I am very glad to be able to state that our operations have been profitable from the very beginning, and that we have every reason to expect that they will be increasingly so in the future."

Between the upper and lower grounds of the Marigold Company is a section of ground known as the Hesbol tract, which is also owned by Mr. John W. Ferris. The next section down the river is owned by the Feather River Exploration Company, and known as the Johnson Ground; we have no particulars as to their operations. Immediately below this ground is the property of the Kia Ora Dredging Company, and the manager has given us considerable information which we copy in this report. It will add considerably to the information on gold dredging. Mr. Eteson, the manager, has given particular attention to explaining fully his mode of operation, and the work accomplished during the past year.

"Name of company: the Kia Ora Gold Dredging Company, Oroville, Butte County, Cal. Equipment—One continuous bucket type dredger, 3¼ cu. ft. bucket, theoretical capacity, 2,500 cu. yds. per 24 hours; two direct-connected centrifugal electric pumps, 15 H. P. capacity, 1,500,000 gals. in 24 hours; this is used to supply water from the river to the pond in which the dredger operates, some 4,000 ft. inland. The property covers 153 acres.

"The following figures are taken from the log of the dredger during the time of operation: Total time from May 1st, 1899, to October 13th, 1900, equals 430 week days. (No work on Sundays.) Hours under power, 7,998, or 333 week days; hours dredging, 6,604, or 275 week days; lost time (cleaning up, oiling, changing lines, minor repairs, clearing stumps and roots, etc., etc.), 1,394 hours, or 58 days; shut down (general overhauling, repainting), 288 hours, or 12 days; shut down to change from steam to electric power, 20 days; delay caused by Power Company, 65 days. The total cubic yards lifted was 340,068, bank measurement, giving an average per day while under power of 1021.2 cu. yds., bank measurement, equivalent to 1,650 cu. yds. bucket measure.

"During the time of operation the dredger has worked through chiefly gravel, some clay, and a very large percentage of sand. It has also made two right-angled turns, and widened or diminished its face as required. On the first change of direction when completely at right-angles to its old face, it has a new face of over 300 ft. This will give



ORE CONVEYING AND DISTRIBUTING BELT IN MILL OF DAHLONEGA CONSOLIDATED MINING COMPANY.

*Abstract of report made to the California State Miners' Association, at the Annual Meeting, 1900.

an idea of the nicety with which a boat of this type can be handled, when the new face is over four times the length of the boat. On the second turn the dredger worked on a new face of about 120 ft. The highest bank handled was 16 ft. of sand above water line, 15 ft. of sand below water line and 5 ft. of gravel. This, however, was only along a portion of the face. Later the dredger worked through a sand-fill 200 ft. long, with banks 13 ft. above water line and 16 ft. below across her entire face, making a total of 29 feet of sand, with practically no gravel. While cutting through this fill a sand pump was used, which took all the sand from the port tables and sluices.

"The bed-rock is a lava ash, varying in depth from 16 ft. to 26 ft. below water line, and is easily worked and cleaned by the dredger. The gravel varies in tightness, but with judicious winching it can all be handled, with very little rough usage to the boat. Six men and a dredge-master comprise the crew. Two men to a shift of 8 hours, and 43 H. P. is about the average power used while running. While under steam power for 6 months 2¼ cords of wood was the average consumption per 24 hours. An average of 30 miner's inches of water pumped into the pond during the summer is sufficient to overcome the seepage and hold the water level 7 ft. above the natural water level of the country."

The Kia Ora ground is about 1 mile from the river and entirely inland, water having to be pumped as stated in the above report. Adjoining this tract and the river is the Hilgers ground, which is now being prospected by a Colorado company. South of this is the West Tract, which is the most southerly tract now under consideration as a dredging proposition, and contains some 400 acres of ground. Information on this side of the river regarding the values of the ground at Oroville is a matter that it is quite difficult to arrive at, and it seems to be the general opinion, and from the writer's conversation with numerous dredging men at that point, that it will average at least 20c. per yard, and the most conservative statement placed on any ground on this side of the river is 15c. The cost of operation has been approximately 4c. per cubic yard for the bucket dredges and 12c. per cubic yard for the shovel dredges.

On the westerly side of the river the dredging land commences below what is known as the Henry Bird Tract. The first large section is owned by Mr. Frank T. Sutherland, and contains some 500 acres, on which a bucket dredge of 5 cu. ft. capacity of buckets, is now being erected. Adjoining this is a tract of 125 acres under option to J. E. Doolittle. On the river fronting these two pieces of ground is another section of about 100 acres, owned by the Feather River Exploration Company. Numerous small sections adjoin the property mentioned, two of which—the Grant and Cartwright pieces—are having a dredge now constructed. A tract of 40 acres of ground at this point has sold lately for $15,000, which was purchased 3 years ago for $1,500. This will give some idea of how land has increased in value in this section.

The land for the next 1½ miles is owned by the Feather River Exploration Company. This is the pioneer concern in the Oroville District, and much of the credit for the boom given dredging not only in California, but throughout the United States, is due to the efforts of this company. Prospecting was carried on in the most efficient manner, shafts being sunk in various parts of the property, and everything done at great expense to provide information before commencing operations. They control altogether on the Oroville District approximately 1,000 acres of ground. The first dredge was erected and commenced operation in February, 1898. This was a steam dredge with 3¼ cu. ft. buckets, which handled approximately 1,000 yards of material per day since they commenced operation. After running this dredge for two years, they constructed two 5 cu. ft. bucket dredges, which have been operating for the past 8 months. They have erected a large machine shop to facilitate repairs, and are equipped in a very thorough manner for continuous operation. Captain Thomas Couch, formerly of Butte, Mont., is the principal owner in this company, and has handled the property from the commencement of operation.

The lowest ground on the west side of the river that has been prospected is the Rio Bonito Orchard, controlled by Mr. William Grant, of Biggs, who has lately prospected this ground, with the result that it shows 36c. per cubic yard. It is proposed to shortly construct a dredge of large capacity on this property. The Oroville ground during the past year has been visited by dredging people from all parts of the world, and the practice at that point is largely used in all dredging operations in this country. This dredging field has many peculiarities to which its great success may be credited. The depth rarely exceeds 40 ft. to bed-rock, and no large boulders are encountered that cannot be handled with the bucket dredge. The bed-rock is a decomposed lava ash and similar to that known in New Zealand as a "mud flow." The gold is distributed in many small channels throughout the ground, and scarcely an acre of the ground but gives a thoroughly good prospect. The river provides ample water for pumping into interior ground, and the writer believes that within another year the boats will be entirely away from the river and working in ponds. The great advantage of this system is that the water level can be raised or lowered, as deep holes are discovered in the bed-rock, and there is no trouble from freshets which rise from time to time in the river.

The northerly part of Butte County has been more or less prospected, and it is anticipated that dredging fields will be opened at this point.

In Yuba County two or three dredges have been in operation on the Yuba River from time to time, with varying success. The great difficulty encountered in this river is lack of water at the low season and heavy freshets at the high season, causing the dredge men endless difficulty from the dredge grounding on the river bottom.

The most important dredging operations in Yuba County are conducted on the Bear River, above Wheatland. At this point Mr. W. P. Hammond has organized the Bear River Exploration Company, which controls some 960 acres of what is claimed to be the finest dredging ground in the United States, if we except the Oroville Field. He has constructed two dredges, one steam and one operated by electricity, both of which have been running for some time, proving the character of the ground, and showing that their prospecting was fairly accurate. It is expected that other dredges will be placed in this tract in a short time.

Horst Brothers also control a tract of ground adjoining this company, which it is claimed is equally good. The value of the ground in this neighborhood is not accurately known, but rumor states that it averages 25c. per cubic yard, and can be handled by the bucket system at not to exceed 5c. This ground extends into Placer County.

In Nevada County, on several tributaries of the Yuba River, dredge prospecting has been going on, and they look forward to a large dredging field in this section.

In El Dorado County quite a little prospecting has been done in the past year and inquiries regarding dredging practice in other places are coming in from that point in large numbers.

In Placer County some work has been done with a view to establishing dredging plants, but as yet have not developed any large field.

In Sacramento County, in the neighborhood of Folsom, several dredges have been placed at work. The difficulties encountered at that point are altogether owing to the hard nature of the ground, and the first machines placed on this ground were placed without the knowledge necessary to handle this character of ground and to make it a success, but dredge manufacturers are now getting into shape where this field will be handled much more successfully in the future.

In Calaveras County some work has been done on the Mokelumne River, and a large steam shovel is now in course of erection on that property. The writer, who has examined most of the plants throughout the country using steam shovels, does not think it will be a great success. This character of dredging requires tight buckets and fed in small quantities to the washers, which is not possible with the steam shovel system.

In Ventura County some prospecting has been done with a view to gold dredging, but as yet there are no actual plants in operation.

From all parts of the country and from a great many points in California demands are made from time to time as to what the returns from the ordinary dredging plant will be, and for the purpose of laying before intending investors, the writer has made up the following schedule as to what might be expected from a proposition such as was figured on a short time ago, and it will show the possibilities of gold dredging:

100 acres of land at $100	$10,000
1 dredge, 5 foot buckets	50,000
Boarding house, blacksmith shop and tools	2,500
Cash on hand	12,500
Cost per acre, $750	$75,000

Cost of Operating per Month.

Power, 75 H.P. at $5	$375
Dredge master	130
Three winch men at $90	270
Three deck men at $75	225
Repairs and depreciation	400
	$1,400

Say, $17,500 per year.

Ten acres per year 30 ft. deep, worked, say, 500,000 yds. per year at 20c.		$100,000
Expenses	$17,500	
Ten acres land, $750	7,500	
		25,000
Profit per year		$75,000

			Per cent.				Per cent.
1 year, capital...	$75,000	Profit....	100	6 years, capital..	37,500	Profit....	200
2 years, capital..	67,500	Profit....	111	7 years, capital..	30,000	Profit....	250
3 years, capital..	60,000	Profit....	125	8 years, capital..	22,500	Profit....	333
4 years, capital..	52,500	Profit....	142	9 years, capital..	15,000	Profit....	500
5 years, capital..	45,000	Profit....	166	10 years, capital..	7,500	Profit....	1,000

A capital of 100,000 shares at 75c. each, $75,000; dividend per year, $75,000, or 100 per cent. per year, and return of 10 per cent. on capital per year. The repairs and depreciation account of $4,800 per year should keep everything up in first-class condition and before the end of 10 years should have enough money on hand, together with last instalment of capital, $7,500, to purchase some more land. It will be noted that the cash on hand, $12,500, will provide in addition to working capital $1,250 per year for extraordinary expenses.

Office expenses for a single dredge proposition would be very small and a manager would be unnecessary. On a 4-boat plant purchasing and looking after the accounts would be such that the dredge-master could not attend to such matters, and a manager would be necessary in this case.

We call attention to a company that consulted with the writer, and the following was his report:

400 acres of land at $75		$30,000
4 dredges, $50,000		200,000
Boarding house, blacksmith shop and tools		5,000
Incidentals and cash on hand		15,000
Value per acre, $625		$250,000
Expenses as per our previous estimate	$70,000	
Management	6,000	
Incidentals	4,000	
		$80,000
40 acres worked per year, say, 2,000,000 yds., value 15c		300,000
Expenses	$80,000	
40 acres	25,000	
		105,000
Profits per year		$195,000

In every case the capital should be returned on every acre worked, as it is unlike other forms of mining, as after working its value has disappeared.

1st year capital	$250,000	Profit on capital	78 per cent.
2d year capital	225,000	Profit on capital	86 per cent.
3d year capital	200,000	Profit on capital	97 per cent.
4th year capital	175,000	Profit on capital	111 per cent.
5th year capital	150,000	Profit on capital	130 per cent.
6th year capital	125,000	Profit on capital	156 per cent.
7th year capital	100,000	Profit on capital	195 per cent.
8th year capital	75,000	Profit on capital	260 per cent.
9th year capital	50,000	Profit on capital	390 per cent.
10th year capital	25,000	Profit on capital	780 per cent.

We believe that too little attention has been paid to this branch of the mining industry, and such information as can be secured regarding

same should be sent throughout the country, showing people exactly what we are doing in the dredging line, and what can be accomplished.

At the present time we have some twenty dredges running in California, which are producing in the neighborhood of $1,000,000 per year, and no doubt the coming season will show a large advance in the production.

The writer will be glad to receive correspondence from any one interested in dredging matters, and will give any information he may have that will further the dredging interests.

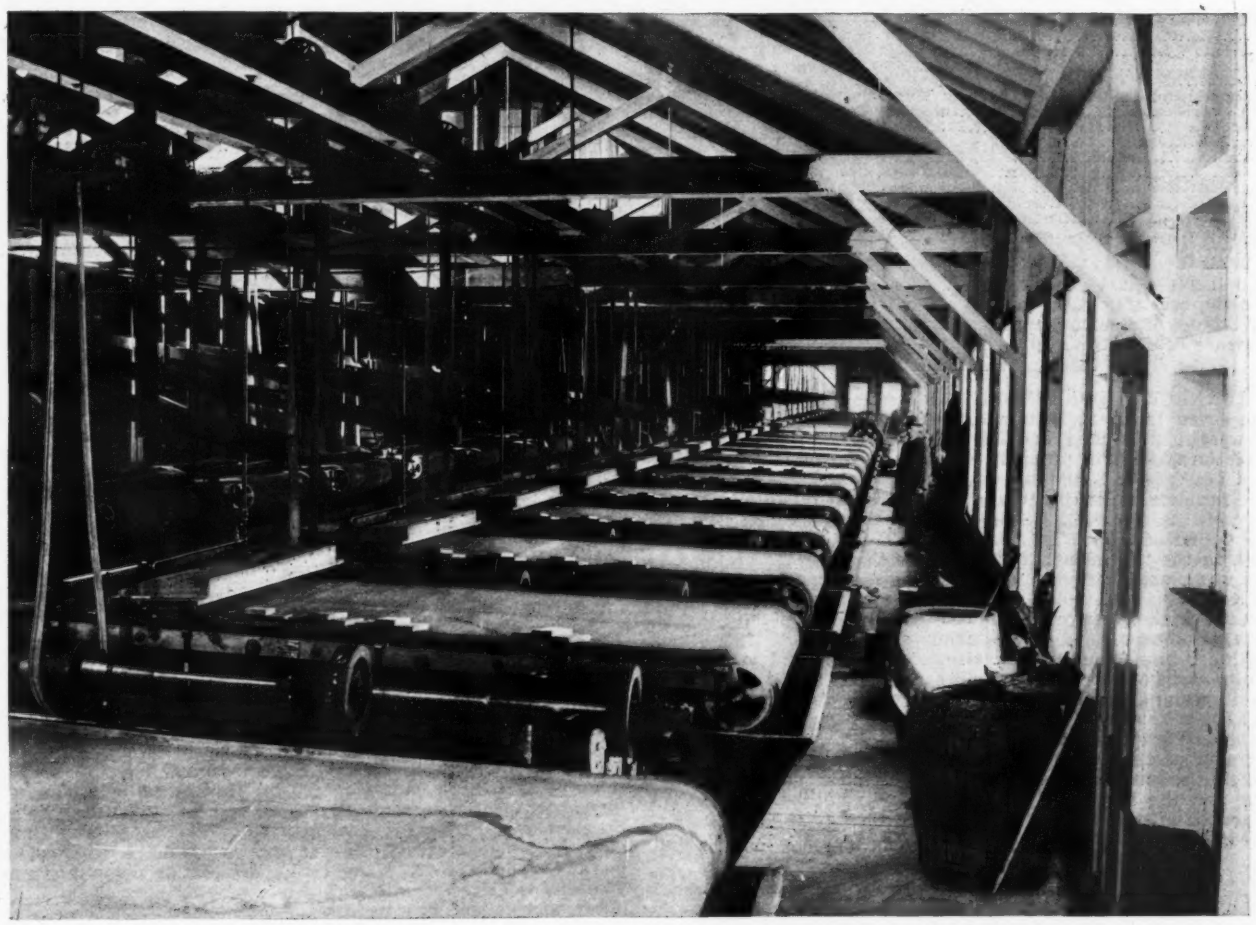
THE BORA CREEK SILVER DISTRICT, NEW SOUTH WALES.

The new Bora Creek District, which is attracting a large number of prospectors and miners, seems to be really one of the most important finds made in New South Wales for a number of years. As usual in such cases, it is difficult to ascertain who was the original discoverer; but the credit of developing the first mine in the district belongs to Mr. John Howell, formerly of the Broken Hill Proprietary Mines. Mr. Howell visited the district soon after its discovery and took an option on the property known as the Conrad Mine, which he purchased later. The account given below is a reliable one, as we are assured by an old correspondent.

The mine has been worked by a force which has been steadily increased as occasion offered, until it was sufficiently developed to warrant the erection of a concentrating plant. The total length on the lode line of the Conrad Mine is 2,360 ft., 1,200 ft. southeast and 1,160 ft. northwest from the main working shaft. During the last 14 months No. 2 tunnel has been extended a distance of 500 ft., which brings it up to the south boundary, a total distance of 1,200 ft. A winze has been sunk close to the south boundary, a distance of 132 ft., and connected with the main No. 2 tunnel, which starts in the vicinity of the main shaft, thus thoroughly ventilating the mine and all the main workings above the line of No. 2 level to the south boundary. There has also been a winze sunk on the lode about 200 ft. south of the main shaft, 107 ft. deep below the 100-ft. level, which has opened and proved the mine to a depth of 270 ft. below the No. 2 level. At the south boundary this would give a depth of 369 ft. below the surface. The No. 1 or 100-ft. level has been extended south from the main shaft 830 odd ft. This level has been connected with No. 2 tunnel by winze 200 ft. south of the main shaft. No further opening or development work has been extended north of the main shaft, and the whole of the lode is still intact between there and the north boundary, a distance of 1,160 ft. This ground will not be opened until the main shaft has reached a depth of 300 ft. Levels will then be run the full extent of the mine, 2,360 ft. The ore that has been required to keep the concentrating plant going for the past year has been taken in part from all the stopes above tunnel level and from three 80-ft. stopes between the tunnel level and the 100-ft. level.

Since the commencement of operations on the Conrad Mine, Mr. Howell has raised 15,011 tons of ore, of which about 14,000 tons have been treated, producing 1,659 tons of first-grade lead concentrates, containing over 130 oz. silver, 55 per cent. lead, and 2½ per cent. copper per ton; 602 tons of first-grade copper-silver-tin concentrates, containing 90 oz. silver, 13 per cent. copper, and 11 per cent. tin per ton; 1,610 tons of copper-tin-silver seconds, containing about 60 oz. silver, 6 per cent. of tin, and 7 per cent. of copper; 882 tons of slimes, carrying 40 oz. silver, 5½ per cent. copper, 7 per cent. of lead, and 3½ per cent. tin; 3,272 tons of copper-silver-tin concentrates, containing about 28 oz. silver, 3 per cent. copper, and 2 per cent. tin. These returns seem to show that the Conrad ore grade is high. In addition to the products already mentioned all the copper-tin concentrates and slimes are being reserved to be treated at the mines as soon as smelters are erected, which work has already been started.

In connection with the developments on the main lode already mentioned an important discovery of ore has been made near the south end of the mine. The discovery was at first considered only an offshoot or branch of the main lode, but in sinking 130 ft. and driving 240 ft. it has proved to be a well-defined lode running parallel to the main lode with the same dip and 30 ft. distant to the west. The ore in this west lode is much richer in silver than the ores of the main lode, the lead assaying as high as 280 oz. and the copper over 100 oz. silver per ton, and the copper ores carry a much higher percentage of copper; the clean concentrates assaying as high as 24 per cent., and there is associated with the copper on an average about 11 per cent. tin. The lode is somewhat smaller than the main lode, and is generally not so regular in size, but the ore and walls of the lode are much more decomposed. This is a very marked feature in connection with the western deposit. By the system of concentration practiced at the mine, the tin and copper, with the silver they carry, are made into one class of concentrates, and the lead and its proportion of silver into another. The tin in the copper concentrates is worth nearly as much as the copper and silver. The tin occurs as tin sulphide, the pure stannite assaying about 24 per cent. tin.



FRUE VANNERS IN MILL OF DAHLONEGA CONSOLIDATED MINING COMPANY.

The deposits of tin ore in this form have long since been known to the manager, Mr. Howell; but until the present developments had taken place were not looked upon as being of so much importance. There can be no doubt that the discovery of stannite in the Conrad Mine is a very important one. Should the sulphide of tin deposits prove permanent—and there is every reason to believe that they will—then the mines in the immediate vicinity will be considerably enhanced in value. The present Conrad workings are within measurable distance of the south boundary, and as both eastern and western lodes look as strong and as permanent in this direction as at any other portion of the workings it seems as though the adjoining southern blocks when developed will produce equally valuable ores. Surface indications assist one in coming to this conclusion, as for a long distance there is evidence of a continuation of lode deposits.

The mine has in the main equipped itself out of its first-grade products, and left at present date a pile of secondary products for future and closer metallurgical treatment, a well-grounded scheme for which is now advancing. Recently several important additions have been made to the metallurgical plant. The steam capacity has been doubled, a large air-

compressor, two Wilfley and one Bartlett machines have been added to the concentrating plant, and also a second May Brothers' jig. Additional pumps have been added. Roads are in course of construction leading up to the proposed smelting site. Foundations for smelters are being excavated, and 220,000 bricks have been burnt for the erection of smelters. A large saw mill plant, capable of cutting out from 500 ft. to 600 ft. of timber per day, is on the grounds, and will shortly be erected. In addition to doing the whole of the development work of the mine, and supplying it with the present plant, there has been developed sufficient ore to keep the increased plant in full operation for at least two years to come. The management is now preparing to sink the present main shaft down to 300 ft., at which point the next line of levels will be started, and continued north, west and southeast the whole length of the Conrad block. The mine at present employs from 135 to 140 in and about the property.

BRITISH COAL EXPORTS.

The table below gives the total exports of coal from Great Britain during the year 1900, compared with those from 1899, the figures being in long tons. We have given the figures from the official returns in full, believing that they will furnish an interesting study for those coal operators here who are interested in cultivating foreign trade:

Destination.	1899.	1900.	Changes.
Russia	3,397,692	3,227,891	D. 169,801
Sweden and Norway	4,494,129	4,485,296	D. 8,833
Denmark	2,052,807	2,124,435	I. 71,628
Germany	5,068,573	5,985,559	I. 926,986
Holland	1,288,829	1,901,544	I. 612,715
France	6,870,365	8,636,632	I. 1,766,467
Portugal, Azores and Madeira	752,220	787,346	I. 35,126
Spain and Canaries	2,291,439	2,619,681	I. 328,242
Italy	5,526,995	5,345,165	D. 181,830
Turkey	490,875	394,623	D. 96,252
Egypt	2,125,924	1,973,790	D. 152,134
Brazil	968,067	791,947	D. 176,120
Gibraltar	326,838	321,894	D. 4,942
Malta	419,461	511,892	D. 92,431
British East Indies	867,960	602,008	D. 265,952
Other countries	6,179,230	6,398,303	I. 219,073
Grand totals	43,111,404	46,108,011	I. 2,996,607

The total increase last year was 2,996,607 tons, or 6.9 per cent. In addition to the coal thus exported the returns give the total coal sent abroad for the use of steamers engaged in the foreign trade at 11,752,219 tons, a decrease of 474,485 tons, or 3.9 per cent.

BLAST FURNACES IN GREAT BRITAIN.—The total number of blast furnaces reported in Great Britain on January 1st, 1901, was 597, of which 349 were then in blast, and 248 idle. The latter number includes many old stacks which will probably never be used again. During 1900 there was a decrease of 8 in the total number of furnaces. There are now 40 new furnaces under construction and 37 being rebuilt.

EFFECT OF OIL ON THE INSULATING POWER OF MICA.—Mr. T. O. Moloney, in the "Electrical Review," says that a piece of the best India mica was placed between two planed surfaces, and withstood an insulation test of 16.000 volts alternating current without fracture. The current was then removed, and the surface of the mica lightly coated with paraffine oil and it was again placed between two planed surfaces. Under this condition it was found that it would break down at 9,000 volts alternating current. Another piece of India mica tested at lower voltages and under the same conditions as above was found to withstand 8,000 volts alternating, dry, and when oil was applied to break down at 4,000 volts alternating current. Tests were made using three different grades of oil, paraffine, linseed and lubricating, and all gave approximately the same results. The surface of the mica can be coated with water and the insulation of the mica will not be lessened. A series of tests on mica immersed in oil showed the effects to be same as when coated.

CALCIUM CARBIDE IN GERMANY.—United States Deputy Consul-General Simon W. Hanauer writes that on November 30th last, the convention of Swiss, Austrian, Swedish, Norwegian and German manufacturers of calcium carbide, which was in session at Frankfort, combined in establishing price schedules and a mode of controlling the sale of their products. The Deutsche Gold und Silber Scheide-Anstalt, of Frankfort (which has branches in the United States and other countries), was appointed the sole agent for the sale of the syndicate's products. It is expected that by this combination the acetylene industry will be considerably strengthened. The members have adopted measures to avoid the fluctuating and ruinously low rates which, owing to heretofore existing sharp competition, have made the manufacture of their products unprofitable. The German acetylene industry is very important. New patents for improved methods of production are constantly being issued. Thirty-two of the smaller towns in Germany are lighted by acetylene gas, and a number of other plants are in course of erection. The gas is also used by the railroads for lighting passenger cars. This year's production of calcium in Germany is estimated at 20,000 metric tons.

A PNEUMATIC ATTACHMENT FOR GOLD DREDGES.—Mr. J. A. Miller, in the "New Zealand Mines Record," describes Ridland's patent pneumatic rock-scraper, designed for the purpose of getting gold out of a hard crevassy rock, which the dredge-bucket cannot break up and remove. The rock-scraper will also assist materially in the removal of large rocks and stones below the water-level. The apparatus consists of an iron tunnel swinging upon an axle, which allows the lower end or mouth of the tunnel to be raised or lowered at will, being able to reach to a depth of 65 ft. The mouth of the tunnel is enlarged to a size sufficient to cover a big stone, and allowing room for the workmen to work around it. The water is expelled and kept out of the tunnel by pneumatic pressure, and when the bottom is reached, or at any other stage of the work, the men enter the tunnel to do whatever may be required, whether it be the removal of stones or scraping up the bottom. To raise any material to the deck of the pontoons a truck running on rails is used. The tunnel is supplied with the electric light, and telephonic communication is provided between the men at the bottom and those upon the deck of the pontoons. The scrapings off the bottom are landed in a receptacle provided for the purpose, and being the richest part of the wash, may be treated with especial care, so as to guard against the loss of any gold.

THE COMPOUNDS OF COPPER AND SELENIUM.—A note recently presented to the Paris Academy of Sciences by M. Fonzes-Diacon says that selenium unites with copper in two combinations, cuprous selenide, $Cu_2 Se$, and cupric selenide, Cu Ct. Cuprous selenide was prepared by Berzilius in a dry way by decomposing cupric selenide by heat. Margottet obtained fine crystals by the action of selenium vapors on copper at a red heat. Parkman obtained it in the form of a black powder, precipitated from a solution of a copper salt at boiling heat by the addition of selenium and sulphurous anhydride. Cupric selenide was made by Berzilius by the action of seleniuretted hydrogen on a copper salt, while Little obtained it from the action of selenium vapor on copper slightly heated.

M. Fonzes-Diacon has studied out experimentally some new methods of forming these compounds. He obtains cuprous selenide in the wet way under the form of green precipitate. The same compound in crystallized form is obtained by the reduction of cupric selenide by hydrogen; in the reduction of copper by carbon; and from the action of seleniuretted hydrogen on a copper chloride at a high temperature.

ELECTROLYTIC LEAD REDUCTION.—The Electrical Lead Reduction Company has resumed manufacture in its new building at Niagara Falls, which replaces that destroyed by fire last March, says the "Electrical World and Engineer." The new plant has a capacity about tenfold that of the one burned down, occupying a building 182 ft. by 140 ft. The electrical machinery equipment consists of two Westinghouse motors of 300 H. P. each direct-connected to a Westinghouse direct-current generator of 250 H. P. The process consists in the electrolytic reduction of lead from galena (sulphide of lead) to the form of a sponge. The sponge may then be compressed into the form of storage battery plates, or converted into litharge, red lead, lead peroxide or white lead. One hundred pounds of spongy lead will yield 108 lbs. of litharge, 110 lbs. of red lead, 116 lbs. of lead peroxide or 125 lbs. of white lead. Sulphuric acid is a by-product of the process, 800 lbs. of acid being produced for every ton of lead reduced. The present capacity of the factory is 10 tons per day, but this may be extended to 40 tons, and there is sufficient ground space for an eventual capacity of 100 tons. At present the product is confined to litharge for use in rubber manufacture and storage batteries. The galena is procured from Joplin, Mo., and is concentrated before being shipped to 80 to 85 per cent. metallic lead. About five days are required to reduce the raw material to spongy lead. The sponge is then washed and burned in the furnace to litharge, the product being 99.36 per cent. pure, while the highest grade of litharge manufactured by former processes is 98.12. Plant is now being put in for rolling and stamping the sponge into storage battery plates.

A LARGE GAS PRODUCER PLANT.—A large gas producer plant designed and built by Mr. Edward J. Duff for the United Alkali Company is described in a recent number of London "Engineering." The gas producer consists of a square chamber, lined with firebrick. Across the center, at the base of the producer, inclined gratings with stoking gear distribute the air and steam evenly across the whole area of the fuel-bed, blowing from the center of the fire outward toward the lining. In this way no free air can escape up the linings, as in the case of outside blown producers; consequently there is no risk of the gas above the fuel-bed being burned into carbonic acid. The linings are also preserved, as there is not an excess of air to cause a too active combustion at that point; the shell is thereby kept cool and radiation reduced to a minimum. The coal is delivered into a conveyor passing over the top of the producer, and delivering into storage feed hoppers over the center of each producer. Large rectangular chambers, immediately behind the producers, are the superheaters and dust separators. Between these and the tower scrubbers are placed the scrubbers for washing and cooling the gas.

The gases pass from the producer through the superheater and dust separator; here the outgoing gas is partly cooled by the ingoing air and steam. The gas then passes through a scrubber, and is further freed from dust and tar before it enters the ammonia-recovery tower, where the gas is scrubbed with a weak solution of acid liquor, which absorbs the ammonia. The gas passes from the top of this tower directly into the top of the gas-cooling tower which forms its own downcomer; the gas passes out of the lower portion of this tower ready for use. The water used to cool the gas rises up inside the gas cooler, and then flows down through the air-heater, or third tower, and becomes cooled for use over again in the gas-cooler. The gas-cooler is so arranged that it not only forms its own gas downcomer, but its own rising main for the water also. As this water flows over the top of the gas-cooler and down the air-heater, it follows that one pumping of the water only is required as against two pumpings in older processes, while the heat losses from gas downcomers and hot water rising mains are altogether avoided, and a greater efficiency of recuperation is thereby obtained.

Mr. Duff has, at present, under construction for an important firm a plant consisting of 10 such gas producers, with ammonia-recovery plant, capable of gasifying 1,400 to 1,500 tons of coal per week. The gas will be used in metallurgical operations, as well as in large gas engines. This plant will be the largest of its kind in existence, and will be capable of producing gas equal to nearly 20,000 H. P. Mr. Duff is also engaged upon the design of a large central power gas plant for an important industrial center, the power to be transformed into electrical energy, and used on a large scale in manufacturing establishments, as well as for private and municipal purposes.

THE WYCKOFF WOOD PIPE FOR MINING.

A wood pipe for mining purposes is manufactured by the A. Wyckoff & Son Company, Elmira, N. Y., and which is known as their patent acid-proof wood pipe. It is offered as a substitute for metal pipe which mine operators often need. This wood pipe is not affected destructively by the sulphur and other impurities of mine water and is extremely durable, being made of especially selected white pine, entirely free of sap, no yellow or jack pine being employed in its manufacture. It is furnished in lengths of from 4 to 8 ft., and is more easily and cheaply laid than iron pipe. The sections are connected by tenon and socket joints, and when driven together make a perfectly air and water-tight joint. A section of the pipe is shown in the accompanying cut. This pipe, it is claimed, is equally satisfactory for suction or discharge lines, and special connections for pumps are furnished, with wood elbows, tees, and any bend required. It can be strengthened to stand any pressure up to 370 ft. head.

The manufacturers have furnished this pipe extensively to operators in the mining districts of the country under many varying conditions and with satisfactory results. The first cost of wood pipe is

WYCKOFF WOOD PIPE.

cheaper than metal, and it is claimed to be more durable and therefore more economical for mine use.

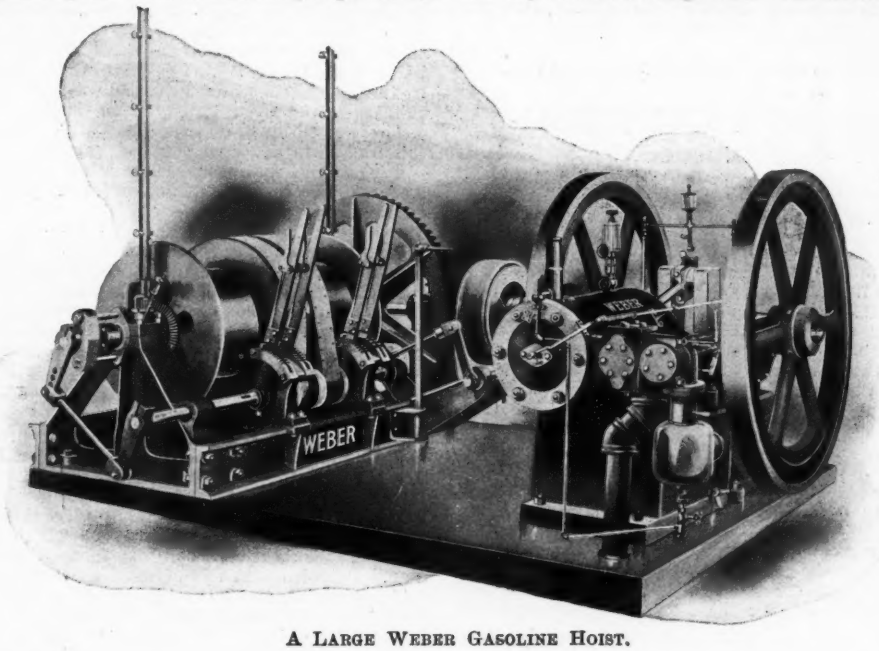
Those replacing an old line or about to put in a new one will find it advantageous to thoroughly investigate the merit of the Wyckoff acid-proof wood pipe. The illustration shows the pipe strengthened, as generally employed for mining purposes.

A DOUBLE GASOLINE HOIST.

Gasoline mining hoists for light work have long since ceased to be a novelty, but they have usually been comparatively small units for a single rope. For many purposes gasoline hoists have such manifest advantages over steam hoists that it is not surprising that previous limitations have been outgrown. The Weber Gas and Gasoline Engine Company, of Kansas City, Mo., is now building gasoline hoisting engines adapted to any of the purposes for which steam hoists have been used exclusively in the past. One of these hoists is shown in the accompanying illustration. It is a double drum reversible hoist, suitable for use in double compartment shafts, double track inclines, or for tail-rope haulage. The advantages of a double hoisting system in cases where it is possible, have long been familiar to mining engineers. The power required to lift the dead weight of the rope and cage at every trip is dispensed with, and the first cost and cost of operation are thereby greatly reduced. The lowering of the cage by power secures absolute safety, so far as this is possible, and avoids the wear and tear of the machine and rope which occur when lowering by brake.

The Weber double drum hoists are well arranged to secure all of the advantages of the double drum system, without undue complication. On the hoist shown in the cut the drums are side by side, although in some cases they are arranged in line. The drums revolve together, the rope being wound opposite on each, so that one drum lowers while the other hoists. When the cages reach the end of the trip, the motion is reversed in a simple but effective manner, although the engine itself runs constantly in one direction. On the engine shaft are mounted a pair of bevel pinions, both of which engage with a single bevel gear mounted on the drum shaft. The pinions are attached to the engine shaft by means of a pair of friction clutches, and by throwing one or the other in gear, motion is had in either direction. A single lever operates this entire system. On its mid-position neither pinion is in gear, and the drums are stationary. By throwing the lever to one or the other extreme, the drums are made to revolve in the corresponding direction. The lever is moved without exertion on the part of the engineer, and the drums are started, stopped, or reversed in an instant without jerk to the rope or shock to the machine.

One of the drums is connected to the drum shaft by means of a friction clutch, so that one rope may be paid out independently of the other. This clutch is used when it becomes necessary to change the level reached by the lower cage when the upper cage is at the surface. Two brakes are provided, one for each drum, for use while this is being done. This friction clutch and the two brakes also enable either drum to be used independently of the other if desired, giving an extremely flexible arrangement. The friction clutches are very compact



A LARGE WEBER GASOLINE HOIST.

and yet powerful enough to transmit the full power of the engine without undue strain. The whole arrangement of clutches and bevel gears is very ingenious and secures all of the desired results with a minimum of complication, and without loss of power. The brakes are powerful enough to hold the entire load on either drum, and have surface enough to control the lowering without undue heating. Of course, the brakes are not used for this purpose in the normal operations of the hoist, but may be upon occasion. All of the operation levers are assembled in one convenient place. One lever controls the speed of the engine, and by simply moving it the speed may be varied at will from the least speed which enables the engine to turn over, to the greatest speed desirable.

All of the parts of the hoist and engine are built in accordance with the most approved modern practice, and altogether the machine will be found thoroughly satisfactory.

RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

CONSTRUCTION OF LEASE FOR QUARRY PURPOSES.—No right to the exclusive possession of the land, or to all the stone in same, is given by an agreement to lease specified premises, and convey all mineral rights on such premises and the right to stone on same; the lessee agreeing, if he uses the property, to take from same a specified number of cords of stone at a specified price per cord, and the owner agreeing to give no other person rights on the premises for such purposes before a specified date, at which time the lease is to be void unless the premises have been utilized by the lessee.—Haven vs. Hughes (27 Ontario Appeal Reports, 1); Canada.

DUTY ON STEEL CYLINDERS.—Steel cylinders or tubes, designed for holding gas under pressure are dutiable at 25 per cent. ad valorem as boiler or other tubes, under paragraph 130, act of August 28th, 1894. The merchandise in this suit consisted of so-called "steel cylinders," from 5 to 18 ft. in length and 4 to 6 in. in diameter, closed at both ends, with the exception of an outlet at one end, and designed for holding gas under pressure. Duty was assessed thereon at 35 per cent. ad valorem, under paragraph 177 of the act of August 28th, 1894. The importers protested, claiming the merchandise to be dutiable at 25 per cent. ad valorem, as boiler or other tubes, under paragraph 130 of the same act, which claim has been sustained.—United States vs. R. F. Downing & Company; United States Circuit Court of Appeals.

DISCOVERY OF VEIN OR LODE IN QUARTZ CLAIM.—Under the law of the United States (Revised Statutes, Section 2320) requiring the discovery of a vein or lode within a quartz claim before any right can be acquired thereto, it is enough to entitle the discoverer to protect his mining rights if ore or metalliferous rock be found in place sufficient to warrant a prudent man in spending time and money on it, though it may not contain ore in paying quantities. A court of equity

will restrain a person preparing to extract ores from the mine of another, through a trespass, since such extraction would destroy the substance and value of the estate.—Muldrick vs. Brown (61 Pacific Reporter, 428); Supreme Court of Oregon.

WHEN ONE ASSENTS TO SALE OF INTEREST HE CANNOT ALLEGE PRIVATE ARRANGEMENT.—A part owner of mining claims, whose interest was not of record, but who assented to the bonding of the same by the record owner, has no standing in equity to repudiate a conveyance of his interest by his co-owner in accordance with the terms of the bond, on the ground of a private agreement between them that such conveyance would not be made unless the purchaser took certain other claims bonded separately; nor is it material that the purchaser had knowledge of such interest, the latter being bound by the terms of the bond to which he consented.—Cline vs. James (101 Federal Reporter, 737); United States Circuit Court of Appeals, Oregon.

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets and the like, will be reproduced whenever possible. Specimens should be of moderate size and should be sent prepaid. We cannot undertake to return them. If analyses are wanted we will turn specimens over to a competent assayer, should our correspondent instruct us to do so and send the necessary money.—Editor E. & M. J.)

276.—New Minerals for California Mining Bureau.—The Bureau has recently received from Australia a specimen of thinolite, a variety of calcite; some crystals of cassiterite (oxide of tin) on crystallized quartz; a specimen of native bismuth and another of native arsenic; a sample of cosalite, a bit of stannite and crystallized chromite. The additions to the cabinets from nearer home are a specimen of copper ore, pseudomorph after tremolite, which comes from the Dyer Mine, Nevada; some gold quartz from the Cabinet Mine, Merced River, and from Latrobe, El Dorado County, Cal. From Plumas County, Cal., there have been sent some natural coke, copper ore and strontianite.

277.—Free Gold in Azurite.—A sample of azurite containing visible particles of free gold is reported found in a mine at Carson, Colo., by A. B. Sanford, according to a Western paper.

278.—Corundum.—We have received from Mr. Llewellyn A. Morrison, of Toronto, Ont., a fine specimen of greenish corundum, associated with biotite mica, taken from the lands of the Crown Corundum and Mica Company. The corundum shows characteristic crystal forms and well-marked cleavage.

279.—Supposed Rubies.—J. H. S.—The dark red crystals are not rubies, or corundum, as the luster might indicate. Corundum is much harder, and the crystals are of different form. Your specimens, judging from their color, luster, hardness and crystallization, are rutile, oxide of titanium.

280.—Sand.—H. H. M.—The sample is a fine sand with sharp grains. It contains fragments of other minerals than quartz, however, and would not be called best quality. It would probably answer for making mortar or for plastering. Delivered at a dock in New York City it might be worth $1 per ton in large lots.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Fuller's Earth.—Kindly tell me in an early number of the "Engineering and Mining Journal" what are the commercial uses of fuller's earth, where it is produced in this country, and by whom is the native earth chiefly handled.—H. F. A.

Answer.—The chief use of fuller's earth in this country is for clarifying oils. Its original use, for fulling wool, which gave the substance its name, is little known here, though it is quite common in Europe. It is found in many places in this country, though there are few deposits good enough in quality and extensive enough to pay for working. The two from which nearly all our supply comes are at Quincy, in Florida, and near Bakersfield, in California.

The chief consumer of fuller's earth in this country is the Standard Oil Company. That company controls the Quincy deposits and does all the mining there.

Consult "The Mineral Industry," Volume VIII.

Vacuum Pump.—I have running to waste 100 gallons of water with a fall of 50 ft. I wish to make use of this to form a vacuum as nearly perfect and as great as this amount of water and head will give. The object is to increase the rate of leach in tanks of ore under a solution. If it is necessary to have more fall I could place the pump 100 or even 150 ft. lower and lay the suction pipe back to the tanks.—A. H.

Answer.—A filter pump devised by Bunsen for laboratory use, on the principle of Spfengel's mercury pump, is shown in Fresenius' "Quantitative Analysis." The principle of Sprengel's pump, for which see almost any text-book of physics, can be used in your case, and almost any firm employing a competent engineer can easily fit you up with a rig that will give a high vacuum; you can probably make one yourself. Its efficiency in hastening filtration, however, would depend on having all joints air tight and allowing no air to enter the receiving tank. With such conditions a comparatively small apparatus will answer, and the water supply and fall you mention will be ample. Whether such conditions can be maintained is another question, one that can be answered only by examination of your works or by actual tests.

Asbestos.—Can you tell me the commercial value of asbestos? How much of it is mined in this country? Is there much imported into this country, and what duty, if any, is paid on it? What grades of asbestos are the most valuable? Can you give me this information, or can you tell me where I can obtain it?—J. K. P.

Answer.—Asbestos has a considerable commercial value, the price varying according to quality. There are many grades, the value depending largely upon the length of the fiber. Where the fibers are long and perfect, and can be separated with comparative ease, the price is the highest. Short fiber, brittle asbestos has only a small value. The production in the United States is not large. A small quantity is mined in California and a little in Idaho, but the larger part is from Georgia. The total is between 900 and 1,000 short tons yearly, the value at mine being from $16 to $18. The imports of asbestos were valued at $312,000 in 1899, and $325,000 in 1900. All or nearly all the asbestos used in this country is imported, chiefly from Canada.

There is no duty on crude asbestos. The duty on asbestos in manufactured form is 25 per cent. ad valorem.

Consult the volumes of "The Mineral Industry." Also "Asbestos and Asbestic," by Robert H. Jones (Price $6). This is a very good study on the subject.

Petroleum as Fuel for Cupolas.—It is desired to learn what progress or efforts have been made in the foundry to melt iron by the use of fuel oil instead of coal or coke. I understand that in the East the cost of oil is not sufficiently low to warrant the general use of oil against coal or coke for this purpose, and as the difference in California is so great, compared with the East, this method, could it be successfully applied, would possess advantages impossible to secure in the Eastern States. Kindly add such details as you can regarding nature of furnace, style of burner, etc.—H. F. J.

Answer.—It cannot be said that much progress has been made practically in substituting fuel oil for coke or coal in melting iron in the foundry. Indeed the question has hardly come up at all in the East, as oil would be much more expensive than coal at current prices. You are quite correct in your understanding on this point. There have not been any experiments made recently to which we could refer you on this head. Probably a reverberatory furnace would be the device most available. Petroleum has been used in cupola work to advantage in Peru and elsewhere, the oil being introduced at the tuyeres with the blast. In this case a certain proportion of coke had to be charged with the iron. Oil has been used in making open-hearth steel also.

In a very interesting series of articles on "Crude Petroleum and its Products as Fuel," written by Mr. H. Tweddle, and published in the "Engineering and Mining Journal," October 14th, 21st and 28th, 1899, some particulars of the use of oil in the furnace were given.

PATENTS RELATING TO MINING AND METALLURGY.

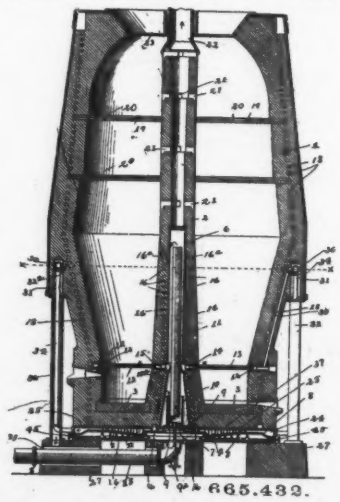
UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects, issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending January 8th, 1901.

665,403. COMPOUND. Ernst Bushman, New York, N. Y., assignor of one-fourth to William Bucknor, same place. A composition of matter consisting of oxide of zinc, pulverized flint, pulverized silex, borax, caustic soda, silicate of potash and soda, asbestos and water.

665,432. BLAST FURNACE. Hugo Hardh, Cleveland, Ohio. The combination with the furnace-body, a central tubular column therein, a ring partition in said column communicating with the interior of the furnace, a central tube in said column and extending through said



665,432.

ring partition and a horizontal frame-casing beneath the furnace-body having a valve-opening therein, of a valve adapted to close said opening and having a tubular extension which loosely receives said tube, and an air-supply pipe communicating with said frame-casing.

665,418. AMALGAMATOR. George W. Fisher, Louisville, Ky., assignor of one-half to Charles A. Gould and A. Leonard Gould, Chicago, Ill. An amalgamator, consisting of a supporting-frame, a bowl with a concave bottom, an agitating-wheel, a vertical tube supported by

the frame, rigid with said arms and communicating with the hollow portions thereof, and means for rotating said tube and arms.

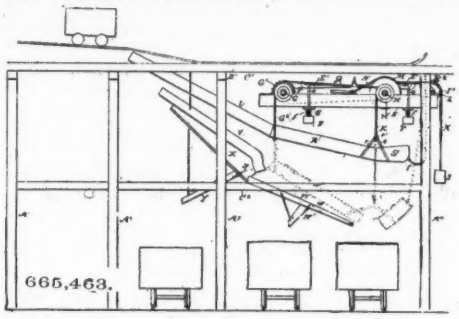
665,419. BURNING KILN FOR BRICKS, ETC. Jonathan F. B. Fiske, Newton, Mass. A kiln and a portable draft apparatus for conducting away the products of combustion from said kiln.

665,426. ART OF OBTAINING CHLORATES BY ELECTROLYSIS. William T. Gibbs, Buckingham, Canada, assignor, by direct and mesne assignments, to the National Electrolytic Company, of New York. The process consists in subjecting the chloride in solution while flowing continuously through a cell to the action of an electric current between two electrodes insulated from each other, but otherwise separated only by the liquid, the density of the current used being such as to maintain the solution in the cell at a temperature suitable for decomposing hypochlorites.

665,427. ELECTROLYTIC APPARATUS. William T. Gibbs, Buckingham, Canada, assignor, by direct and mesne assignments, to the National Electrolytic Company, of New York. An electrolytic cell having two electrodes connected respectively to the positive and negative poles of a source of electricity, and the negative electrode consisting of vertical metallic wires or rods of a diameter less than ¼ in.

665,448. COMPRESSOR. John G. Lapham, New York, N. Y., assignor to the Lapham & Schroeder Manufacturing Company, of New Jersey. In a compressor, a compound, adjustable, cushioning piston, having an upper section or cap screwing into a middle section or body, securing a bull-ring and packing-rings, a lower section or guide secured by a bolt and nut to said middle section or body, and a spiral spring interposed between said lower and middle sections.

665,463. COAL TIPPLE. John M. Phillips and John J. Fleming, Pittsburg, Pa., assignors to said Phillips. The combination with a screen of a basket arranged to receive the coal from the screen with means



665,463.

substantially as described, whereby the weight of the coal will cause the basket to descend, both ends descending simultaneously but at different rates of speed, whereby the angle of the basket is changed in its descent.

665,466. WHETSTONE-MAKING MACHINE. Ignatius Reitz, Portsmouth, Ohio. The combination of a bed-plate having a series of grooves formed in its upper surface, end plates having lower edges constituting in outline a counterpart of the surface of the bed-plate in cross-section and supported above and in proximity to said plate, and means for reciprocating said bed-plate.

665,468. CHEMICAL APPARATUS. Ralph C. Robinson, Boston, Mass. In a test-glass the combination of a large tube open at the top with a capillary side tube connecting therewith at or near the bottom, the capillary being provided with an enlargement at the top.

665,568. GAS-GENERATING APPARATUS. Clarence M. Kemp, Baltimore, Md. The combination with a converter; of a blower to supply said converter; means for driving said blower; a hydrocarbon-storage tank; a pump for delivering hydrocarbon from said tank to said converter, comprising a pump-cylinder; a reciprocating plunger therein; and a suction-chamber; and the necessary connections.

665,574. HOISTING AND DUMPING APPARATUS. Charles A. Morris, Glen Ridge, N. J. Apparatus having a hinged and cushioned dumping-guide weighted to resist in a yielding manner the movement of the bucket or receptacle in dumping, whereby the latter carries the guide over in dumping and the guide follows the bucket on the return.

665,598. STEAM PUMP. Walton E. Eby, Roanoke, Va., assignor of one-half to Malcolm W. Bryan, same place. A pump comprising a cylinder having an interior annular flange located between its ends to form an upper piston-cylinder and a lower water-chamber, steam supply and exhaust pipes for the piston-cylinder, a plunger-cylinder engaged with the flange and extending into the water-chamber, and valved water inlet and outlet pipes.

665,613. AIR COMPRESSOR. Alexander MacLean, New York, N. Y., assignor to Julia J. MacLean, same place. An air-compressor consisting of a main casing provided with means for supplying water thereto, said casing being provided centrally with a tube, a large opening, a tank suspended through said opening, a cap secured to the casing and closing the upper end of said tank, ports or passages.

665,617. METHOD OF MAKING POTASSIUM HYDROXIDE. Heinrich Precht, Neustassfurt, Germany. The process consists in evaporating a solution containing about 50 per cent. of potassium hydrate and about 0.5 per cent. of potassium chloride, allowing the crystals to separate out at about 60° C. and removing the crystals.

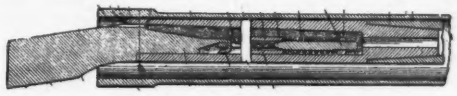
665,635. KILN. Walter P. Grath, St. Louis, Mo. A kiln comprising a main body portion and a solid floor with flues extending across said kiln beneath said floor and with a vertical bag at one side of said kiln, and a furnace located at the same side of said kiln and communicating directly with said vertical bag, and said bottom flues communicating with a source of heat.

665,682. EXCAVATOR BUCKET. Olaf Hetlesaeter, Chicago, Ill. The combination, with the bucket-handle, of a door divided into a plurality of parts, one of said parts being hinged on an axis fixed relatively to said bucket; and the second of said parts having a hinged connection with said first part, at or near the outer or lower extremity of said second part.

665,685. EXCAVATOR. Olaf Hetlesaeter, Chicago, Ill. In an excavator, parallel beams slidingly supported and adjustable with reference to their points of support in the direction of their length, for the purpose of regulating the position of the bucket; in combination with a part for supporting said beams; and tension-rods attached at one extremity to said beams, and at the other extremity to said part wherein said beams are supported.

665,704. ELECTRIC FURNACE. George S. Strong, New York, N. Y. A furnace in combination with a conduit or conduits leading into the furnace adapted for the feeding in of the material to be treated in the form of an electrode or electrodes, one or more muffles surrounding said electrode conduit or conduits, independent means for heating said muffles and means for heating the furnace by the electric arc including an electric circuit or circuits whereby current is conveyed to the electrodes in the conduits.

665,711. ROCK DRILL. Otto G. Worsley, Newark, Ill. In combination, a tubular stock having a portion of its end squared to form a positive seat; a cutter having a shoulder adapted to engage such seat and having an inclined face for bearing against the wall of the stock to direct the shoulder to the seat; a stem projecting from



665,711.

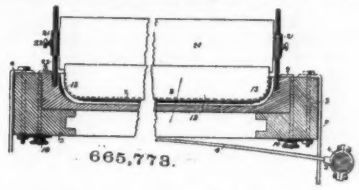
the cutter into the chamber of the stock; an expansible spring coiled upon the stem and having its inner end engaged thereby, the stock being provided with a seat for the outer end of the spring.

665,717. APPARATUS FOR MELTING IRIDIUM. Gyulo Armeny, New York, N. Y., and William C. Marion, Arlington, N. J. An apparatus consisting of a supporting-table, a metallic plate supported thereon and connected with one pole of a source of electricity, a clamp attached to said plate, a carbon plate provided with a plurality of depressions for receiving iridium in small quantities, and a movable electrode connected with the other pole of the source of electricity.

665,730. GAS PRODUCER. Edward J. Duff, Liverpool, England. A gas producer provided with a water-sealed ash trough, a blower-casing and a cover therefor having inclined sides extending completely across the lower part of the producer, the top of the casing and the bottom of the cover being placed near the normal level of water in the ash-trough to give air-outlets there extending across the producer.

665,744. PROCESS OF TREATING SULPHIDE ORES. Hugh F. Kirkpatrick-Picard, London, England. The process of treating consists in roasting the ore to the form of oxides, mixing the roasted product with carbonaceous material suitable for coking, forming the mixture into briquettes, and distilling the briquettes under such conditions that they are first coked into coherent masses and finally the zinc reduced and volatilized while the lead is reduced and the lead and silver retained in minute particles throughout the coke.

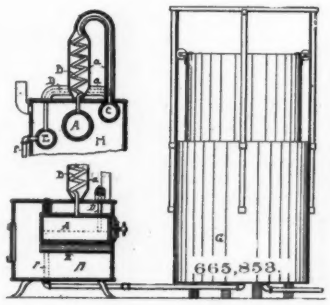
665,773. GOLD-SAVING APPARATUS. Francis J. Drake, San Francisco, Cal. The combination of a supporting-frame, riffle-sections supported upon said frame and having channels extending transversely, said channels having a concaved curvature at each end, and vertical



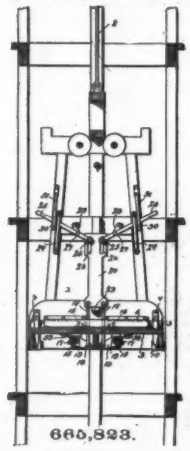
665,773.

plates fixed to the sections and having their lower edges dipping into the channels, and having their lower angles formed convex to correspond with the end concavities of the channels whereby the sand and material is kept loose and is prevented from packing in the channels.

665,823. CAGE CHAIR FOR MINES. Melvin H. Beck and Julius R. Gaynor, Victor, Colo. The combination with a cage, of reciprocating chairs mounted on the cage, of rock-shafts provided with arms connected with the chairs, springs for actuating the rock-shafts to return the chairs automatically to their retracted position, and operating



665,853.



665,823.

mechanism connected with and adapted to actuate the rock-shafts to project the chairs, said operating mechanism being capable of movement independently of the rock-shafts, whereby it is adapted to be arranged to permit the chairs to operate automatically.

665,835. SAND-WASHING APPARATUS. James H. Miller, Washington, D. C. An elongated settling-tank adapted to contain a body of comparatively still water, means for feeding material to the longitudinal sides of the tank above the water-level, and means for forcing a stream of water lengthwise the tank near the water-level.

665,853. WOOD-GAS GENERATOR. Dent H. Hogue, Tacoma, Wash. A wood-gas generator, comprising a furnace, a wood-retort and multiple tar-retorts all inclosed within the same furnace, a pipe connecting the wood-retort with one of the tar-retorts, said pipe being arranged to permit a portion of the tar distillate to fall back into the wood-retort and another portion to pass over into the tar-retort, a pipe connecting one tar-retort with the other for the passage of the distillate from one to the other, and a condenser-jacket surrounding each of the pipes connecting the retorts.

GREAT BRITAIN.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy.

Week Ending December 15th, 1900.

23,330 of 1899. SAFETY APPLIANCE FOR MINE CAGES. W. Fehlenberg, Herne, Germany. Mechanism for preventing the falling of mine cages on the breaking of the cable.

23,816 of 1899. ROCK CRUSHER. E. D. Chester, London. Improved form of rock crusher of the gyrating cone type.

14,958 of 1900. MINING MACHINE. J. L. Mitchell, Galesburg, Knox County, Illinois, U. S. A. A coal mining machine of the chain cutter type.

17,461 of 1900. SODIUM PEROXIDE MAKING. G. F. Jaubert, Paris, France. The production of a compressed form of sodium peroxide.

PERSONAL.

Mr. Louis Zeckendorf, of New York, has been in Tucson, Ariz.

Mr. Chas. L. Herzig, of New York City, is examining mining properties near Salisbury, N. C.

Mr. C. C. Bragg, of Cincinnati, O., and G. M. Nelson, of St. Paul, Minn., have been in Gilt Edge, Mont.

Mr. A. W. Stoddard, of London, Eng., was recently in Salt Lake, Utah, and from there went to British Columbia.

Mr. W. B. Andrew, manager Shawmut Mining Company, of Bingham, Utah, recently returned there from the East.

Mr. E. A. Carter, president, and Mr. W. B. Thompson, treasurer, of the Shannon Copper Company, have been in Clifton, Ariz.

Mr. Dave Lewellyn has resigned as mine inspector of the 1st West Virginia District, to resume his engineering practice at McDonald, W. Va.

Mr. R. A. F. Penrose, Jr., of Philadelphia, Pa., president of the Commonwealth Mine and Milling Company, is on a visit to the company's property at Pearce, Ariz.

Mr. Henry S. Mackay, of Boston, and Mr. Bryant C. Morse, of Woodbury, N. J., have been in Kingman, Ariz., to look at the C. O. D. Mine, in which they are interested.

Mr. Geo. E. Price, who has been operating mining properties in Surinam, So. America, for a Holland company, passed through New York City on his way home to California on Tuesday last.

Mr. W. E. Corey, general superintendent of the Homestead Steel Works of the Carnegie Steel Company, sailed for Genoa, Italy, on January 22d, and will remain abroad about 2 months for rest and recreation.

Mr. Chas. F. McDonald, superintendent of the converting department of the Duquesne Steel Works of the Carnegie Steel Company, is to be given a trip to Europe at the expense of that concern. He will leave in April and be gone about 2 months.

Mr. Gustaf Wallin, engineer of mines for the Luossavaara-Kirunavaara Company of Kiruna, Sweden, and Mr. J. W. Jowett, of New York,, who represents the Ingersoll-Sergeant Drill Company of that city, have been in the Superior copper regions visiting the mines here. Mr. Wallin spent his time examining mining machinery, comparing American machinery with that used in Sweden.

OBITUARY.

Henry Chance, a leading chemical and glass manufacturer, of Great Britain, died at Leamington, Eng., on January 7th, aged 73 years. He was chairman of Messrs. Chance Brothers, Limited, of Birmingham, Eng., and also of Messrs. Chance & Hunt, Limited, of Oldbury. Mr. Chance was deeply interested in a successful process for refining sulphur.

Capt. Preston C. F. West, chief consulting engineer of the Calumet & Hecla Mining Company, died of heart failure in Boston on January 11th. He was born in 1835, and had just begun the study of civil and mining engineering when the Civil War broke out . He served throughout the whole of the war and then became a mining engineer in Central and South America. He made a number of surveys on the Pacific Coast for Professor Alexander Agassiz, and in this way became identified with the Calumet & Hecla property.

Dr. William Pole, Honorary Secretary of the British Institution of Civil Engineers, died on December 30th, aged 86 years. In his early life he was professor of civil engineering at Elphinstone College, Bombay, and at University College, London. After opening London offices as a consulting engineer, he served as secretary to royal commissions on railways, water supply and the pollution of the Thames, and was a member of the commission on iron armor. He was elected a member of the Institution over 60 years ago, and contributed frequently to its publications. He wrote biographies of Sir William Siemens and Sir William Fairbairn, and a widely-known work on whist.

John Sever Tebbets died in Boston, Mass., January 19th. He was born in Medford, Mass., July 4th, 1858, and graduated from Harvard in 1880. He was employed by the Boston & Albany Railroad at Boston for a time, and went to Albany in the employ of the Boston & Albany and the New York Central railroads. He afterward took charge of the coal mines of the Union Pacific Railroad and became in turn general passenger and general freight agent of that road. Leaving the Union Pacific, Mr. Tebbets became general superintendent of the Duquesne Mining and Reduction Company, at Crittendon, Ariz. A short time ago he was appointed general purchasing agent of the Boston Elevated Railroad, but had not assumed his duties.

Joseph S. Ricker died at his home in Portland, Me., on January 15th, aged 79 years. He was born at Lebanon, Me., and made the start of his fortune by establishing a tannery during the Civil War. At his death he was considered about the richest man in the State. He had lived in Portland since 1852. The deceased was president of the United States Oil Company, of Boston, and a director of the Boston & Maine and Maine Central railroad corporations and many Portland financial institutions. He was a director and one of the largest stockholders in the United States Mining Company, United States Oil Company, Centennial-Eureka Mining Company, American Zinc, Lead and Smelting Company and the North American Gold Dredging Company. He leaves a widow.

John Leisenring, of Upper Lehigh, Pa., died January 19th at a hospital in Philadelphia, Pa. Death was due to heart disease. Mr. Leisenring was born in Ashton, now Lansford, Carbon County, Pa., June 3d, 1853. His father was Judge John Leisenring, who was prominently identified with the anthracite coal industry, and built the Lehigh & Susquehanna Railroad. For many years Judge Leisenring was chief manager of the Lehigh Navigation Company. He bought the property on which the Upper Lehigh Coal Company was organized, and was president of the company from 1864 until the time of his death in 1884. John Leisenring, Jr., was educated at Schwartz's Academy, Bethlehem, and at Princeton, and was a civil and mining engineer. He was prominent in coal interests, and was also associated with lumber and iron companies.

Shortly after the death of his father he became president of the Upper Lehigh Coal Company. In 1896 he took a nomination for Congress and was notably successful, making a remarkable sweep, including in his support the men of the collieries. Upon the completion of his term he was urged to accept a renomination, but declined. He leaves a widow.

Prof. Elisha Gray, the electrical inventor, died at Newtonville, Mass., January 21st, of neuralgia of the heart, aged 66. His first invention was an automatic self-adjusting telegraphic relay, which never came into greater use than to furnish the basis for later inventions. He followed this soon after with the telegraphic switch and annunciator for hotels, and the private telegraph line printer and the telegraphic repeater.

By this time Professor Gray had organized the Western Electric Company, and had a manufactory of electrical apparatus at work in Cleveland. During 1873-4-5 his attention was much absorbed in developing a system of so-called electric-harmonic telegraphy for transmitting sounds over wires.

He filed a claim in Washington, expecting to perfect his discoveries, and then followed his long fight as the claimant to the invention of the telephone. He claimed that his patent papers had been tampered with and revealed to the Bell people. He received but about $100,000 from his work on this patent. He also invented a telautograph, to transmit writing, and one for under-water fog signals.

SOCIETIES AND TECHNICAL SCHOOLS.

Merchant's Association of New York.—At the recent annual meeting the following directors were elected to serve until 1904: William F. King, John C. Eames, William E. Tefft, Gustav H. Schwab and James B. Dill.

Montana Society of Engineers.—The society closed its annual session in Butte City on January 12th last with a banquet at the McDermott Hotel. About 35 members were present. Officers were elected as follows: President, Frank L. Sizer; 1st vice-president, August Christian; 2d vice-president, George T. Wickes; secretary and librarian, Richard T. Vail; treasurer and manager of the engineering society, J. H. Harper; trustee for 3 years, Bertram P. Dunshee.

American Society of Civil Engineers.—The society, at its annual business meeting on January 16th, elected the following officers: President, J. James R. Croes; vice-presidents, Henry S. Haines and George H. Benzenberg; treasurer, Joseph M. Knap; directors, Josiah A. Briggs, George F. Swain, Emil Kuichling, M. T. Endicott, Edward C. Carter and Frank C. Osborn. The report of the board of directors showed the total membership to be 2,337, a gain of 138 in the year, and indicated that the society's finances were in an excellent condition. The board announced that an index to the first 44 volumes of the society's "Transactions" would be issued in a few months.

Western Society of Engineers.—This society with headquarters at Chicago, has elected the following officers for the ensuing year: President, Octave Chanute; first vice-president, Wm. H. Finley; second vice-president, B. E. Grant; secretary, Nelson L. Litten; treasurer, Ralph Modjeski; trustees, J. J. Reynolds, August Zeising and Bion J. Arnold. Mr. Chanute, the incoming president, is one of the oldest engineers in the United States, having started as a rodman when the roadbed for the Hudson River Railroad was laid out in the early forties. For many years he was the chief engineer of the Erie Railroad. The annual banquet of the society was held in the Grand Pacific Hotel.

Lake Carriers' Association.—At the annual meeting in Detroit, January 17th, the following officers were chosen: President, Capt. A. B. Wolvin; vice-presidents, J. G. Keith, Chicago; J. C. Gilchrist, Cleveland; William Livingstone, Detroit; G. L. Douglas, Buffalo; D. T. Helm, Duluth; Thomas Cranage, Bay City; F. L. Vance, Milwaukee; A. W. Colton, Toledo; M. J. Cummings, Oswego; J. H. Sheadle, Cleveland; F. J. Firth, Philadelphia; F. W. Gilchrist, Alpena; W. H. Rogers, Tonawanda; L. M. Bowers, Cleveland; E. S. Mills, Cleveland. The executive officers, as follows, were re-elected unanimously: George P. McKay, treasurer; C. H. Keep, secretary; Harvey D. Goulder, counsel.

INDUSTRIAL NOTES.

No. 2 rod mill of the Illinois Steel Company, at Joliet, Ill., produced during 48 turns in December 9,643 gross tons of No. 5 rods, or an average of 201 gross tons per turn.

The Carnegie Steel Company is to rebuild Carrie Furnace No. 1 at Rankin, Pa. The old stack had a capacity of about 300 tons per day, but the new furnace will have a daily capacity of from 700 to 800 tons.

The Clayton Air Compressor Company, of New York City, has secured a contract for the supply of 13 400-ft. air compressors, which will be shipped for use in the German State Railroad shops. Shipments of several equipments are pending for R. Rogers & Company, of Paris, France.

The Schultz Bridge and Iron Company branch of the American Bridge Company has been awarded the contract for a pier and warehouse at Progresso Yucatan, Mexico, for the Compania del Ferro Carrill Muelle y Almacenes del Commercio. The pier is to be constructed for a double-track railroad, and will be 40 ft. wide and 550 ft. long; 8-in. solid steel piles will be used.

The American Bridge Company has been awarded the contract for the construction of the superstructure of the new double-deck bridge across the Allegheny River of the Pennsylvania lines west of Pittsburg. The contract is one of the most important single pieces of work let so far this year. It will require about 7,000 tons of steel, will cost about $500,000 and will require until January 1st, 1902, to complete.

Messrs. C. J. Trent and Richard Golden were in Chicago last week looking for machinery in the interest of the North Mount Lyell Copper Company, of Tasmania. Contracts for copper smelting machinery were placed with the E. P. Allis Company, Milwaukee, for motors and generators with the Bullock Electric Manufacturing Company, of Cincinnati, and for a 40-ton traveling crane and runway with Pawling & Harnischfeger, Milwaukee.

A representative of the B. C. Riblet Company will leave New York City on January 20th to superintend the work of installing tramways at the mines controlled by the Andes Mining Company, an English company operating at Chimbote, Peru. The contract represents an outlay of $65,000. The machinery and plant were constructed at St. Louis, Mo., on specifications prepared by Mr. Riblet. All the timbers for the platforms and ore bins must be cut and matched for delivery on the ground, ready to assemble.

The Buffalo Forge Company, of Buffalo, N. Y., recently placed on the market a novel folding forge, of light weight and exceedingly small compass, when knocked down and packed within its case. The outside dimensions of the case are but 22½ by 27½ by 10 in. The forge is designated as the Buffalo "Army and Navy" forge and is in use in the Japanese Navy. The company recently received a rush order for 100 of these forges for use in the United States Army in the Philippines. Owing to the necessity of shipping on a certain transport, only 3 days were given in which to fill the order, but the forges were placed on the transport in the specified time.

The 14 cement mills located near Jeffersonville, Clarke County, Ind., have in contemplation the formation of a combine. The total taxable valuation of these mills, taken from the records in Jeffersonville, is $429,319, with the

individual assessment as follows: Louisville Cement Company, $152,203; Union Cement and Lime Company, $86,998; Clark County Cement Company, $24,943; Globe Cement Company, $22,380; Banner Cement Company, $22,380; New Albany Cement Company, $22,070; Kentucky and Indiana Cement Company, $22,750; Hoosier Cement Company, $16,960; Indiana Cement Company, $12,708; United States Cement Company, $11,901; Golden Rule Cement Company, $10,350; Standard Cement Company, $9,515; Silver Creek Cement Company, $9,161,; Ohio Valley Cement Company, $5,000. At present the Central Cement Company, with headquarters in Jeffersonville, represents a combine embracing 6 cement companies, but it is ostensibly the selling agent of those establishments.

The Gardiner Electric Drill and Machinery Company is now equipping a 3-story building in Denver, Colo., and expects to have in a few weeks the finest machine shop of its size in the West. The works will have a capacity of 50 drills per month at first, with facilities for increasing the capacity to 200 drills per month. The Gardiner electric drills are now in practical operation in Colorado, Oregon, Utah, Montana, Wyoming, California, Mexico and England, and are reported to give excellent satisfaction. So far the "B" or medium size drill has been the only one manufactured, but the company is now getting out a "Slugger" or "C" drill, which will weigh about 260 lbs. and require a 2-H. P. motor. The company claims for its drills a large saving power cost over air drills and also cheaper first cost. The drills can be used on a cross-bar, column and arm, tripod or quarry-bar. In addition to the Denver factory the Gardner drills are now made in California by the California Electrical Works of San Francisco, and in England by the Gardner Electric Drill and Hammer Company, Limited, of London, and the directors are negotiating for the establishment of a manufactory in one of the Eastern States.

TRADE CATALOGUES.

A memoranda tablet of neat design and convenient size has been sent out by Rudolph Brandt, of New York City. The tablet is to remind the user of Selden patent packings, which received a bronze medal at the Paris Exposition.

"Beach's Cement, with Certain Evidences of Its Value and Success," is the title of an artistic little pamphlet sent out by the Lawrenceville Cement Company, of New York City. The pamphlet contains cuts showing views about the mines and works of the company and also buildings, sewers, conduits, etc., in constructing which Beach's Rosendale cement was employed. The pamphlet also contains numerous testimonials.

Handsome calendars of convenient size and design for office use have been received from the Lunkenheimer Company, of Cincinnati, O., maker of valves and steam fittings; the Marion Steam Shovel Company, of Marion, O., and the Vulcan Iron Works, of Toledo, O., both firms calling attention to the increasing use of steam shovels and dredges. The Southern Marble Company, of Marble Hill, Ga.; Rogers, Brown & Company, of New York City, and several other companies have got out attractive calendars.

The firm of F. W. Braun & Company, of Los Angeles, Cal., dealing in assayers' and laboratory apparatus and supplies, has published its Catalogue C for 1901. This comprises 346 pages and is about the most comprehensive catalogue of assayers' supplies that we have seen. It contains a number of useful references and more than the usual amount of information. The firm states that it makes a specialty of Cary furnaces and muffels; Calkins' cupel machines, gyratory mullers and radial backing plates, Braun's crushers and pulverizers, L. & C. combination furnaces, hydrocarbon blowpipe outfits and fine balances, and chemically pure cyanide of potash and zinc shavings.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods of any kind, and shall be pleased to furnish them information, catalogues, etc.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, and have no pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

The 12th annual convention of the United Mine Workers of America opened at Indianapolis on January 21st and will be in session for 10 days or more. Among the questions of importance that the convention will consider is that of differentials between pick and machine mined coal. The difference ranges from 22 to 27c. in favor of the machine-mined coal and this is causing much unrest and a demand that the differential be reduced. Another question is that of getting the West Virginia district into the organization and bringing all the anthracite workers into the order. There is also a strong likelihood that the convention will ask for higher mining rates in spite of the fact that the selling prices of soft coal are lower than 1 year ago.

The formal notice sent to stockholders of the American Smelting and Refining Company, advising them of the special meeting to be held on February 16th, to act upon the proposition to increase the capital stock of the company to $100,000,000, is accompanied by a circular in part as follows:

"Such increase is deemed advisable to enable this company to acquire the smelting and refining plants, appurtenant property and business of M. Guggenheim's Sons, and add to its working capital to the extent stated below.

"In consideration of (1) the transfer to this company of the said plants, property and business, (2) the payment in cash or in working capital of a sum equal to two-thirds of this company's working capital on January 1st, 1901, and (3) the payment in cash of the further sum of $6,066,666.66, there is to be issued and delivered by this company $45,200,000 in aggregate par value of its capital stock, one-half to be preferred and one-half common.

"The present authorized capital stock of the company is $35,000,000, one-half preferred and one-half common, of which $10,200,000 (one-half preferred and one-half common) is unissued. This unissued stock, together with the proposed increase of $35,000,000, one-half of which is preferred and one-half common, will provide the $45,200,000 of stock required as above.

"The properties to be acquired include plants and the property appurtenant thereto as follows: At Perth Amboy, N. J., smelting and refining and electrolytic copper plants; at Pueblo, Colo., smelting and refining and copper reduction plants; at Aguas Calientes, Mexico, smelting and refining and copper reduction plants; at Monterey, Mexico, a smelting plant; in South America, mining and smelting interests; also valuable leases and contracts running a term of years in the United States, Mexico and South America.

"After a careful investigation into the condition of these properties, and also into the business and profits thereof, their acquisition upon the terms hereinbefore stated seems to your officers and board extremely desirable."

It is reported that the total cash (or working capital) payment to be made by the Guggenheims is nearly $15,000,000, making the cash resources of the American company after consolidation about $25,000,000.

Allowing 100 for the preferred stock of American Smelting and Refining Company and 60 for the common, the $22,600,000 preferred and $22,600,000 common which the Guggenheims are to receive would be worth in round figures $35,000,000. Against this the Guggenheims are to pay $6,066,666 in cash, and about $9,000,000 more in cash or working capital. This would allow about $20,000,000 for the Guggenheim plants, good-will, etc.

ARIZONA.

Pinal County.

Double Standard Gold Mining Company.—The following have been elected officers: President, F. E. Burgess, of Chicago; vice-president, J. D. Weedin, of Florence, Ariz.; secretary, J. T. Garrison, of Oakland, Cal.; treasurer and general manager, Thos. F. Weedin, of Florence. The company's property is the Double Standard Mine in the Old Hat mining district.

Yuma County.

Alesandro Mining Company.—This company continues work at Red Rock and has done about 150 ft. of tunneling and 300 ft. of shaft work. The main shaft is down over 120 ft. It has been the intention of the management to put in a pumping plant and pipe line and secure a supply from the Gila River, but water found in the shaft will not make such an expense necessary. Another shaft has been started, and 16 men are being employed on 2 shifts. Regular shipments are made, the high-grade ore averaging, it is said, 22% copper and 30 oz. silver. The second-grade ore is stored on the dumps.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Lincoln.—At this mine at Sutter Creek drifting is going on on the 300, 600 and 1,200-ft. levels. New buildings are being erected and other improvements made. The mill has shut down temporarily.

Mutual Mining Company.—The second payment of $15,000, due for the Fernando Ranch, has been tied up by injunction, in the San Francisco Trust Company, until the title to the ledge recently discovered near the line between the Ranch and the Golden Eagle Mine has been determined. It is said that the ledge where it was cut on the 400-ft. west crosscut of the Mutual Mine, is 10 ft. in the Fernando ground and stands nearly straight, but may apex in the Golden Eagle ground. The matter may be adjusted without a suit.

Calaveras County.

(From Our Special Correspondent.)

Church.—This mine, 2 miles southeast from El Dorado, has been unwatered down to the 6th level and the tunnel which leads to the air-shaft has been bulkheaded to prevent the mine from being flooded from the creek during the freshets.

Kern County.

(From Our Special Correspondent.)

Rand Exploration Company.—This company is working a promising property near Garlock. A tunnel has been run 500 ft. tapping the ledge at 200 ft. depth. There is said to be enough $15 ore in sight to warrant the erection of a mill.

Placer County.

(From Our Special Correspondent.)

Big Channel Consolidated Gold Mining Company.—This company's property is located on the Forest Hill Divide, 10 miles east from Colfax, extending from the North Fork to the Middle Fork of the American River, including 7 miles of the old channels. A tunnel will be run low enough to drain the entire channels. Developments on the property are said to show the gravel to average high. A mill will be erected.

Turkey Hill.—At this gravel mine, 1½ miles above Michigan Bluff, a new electric plant has been installed which is now running the mill and the electric locomotive which hauls the gravel cars from the mine.

Plumas County.

(From Our Special Correspondent.)

Claybank.—This claim, near La Porte, is being worked by J. H. Thomas, of Oakland, for a local company. Three shifts are employed in the main tunnel.

Cleghorn Group.—This property, on the Middle Fork of the Feather River, has been surveyed and a patent applied for. J. H. Thomas will take charge.

Shasta County.

(From Our Special Correspondent.)

Midas.—There has been a heavy fall of snow at Harrison Gulch and this mine has been compelled to close down for lack of fuel and water. Most of the 250 men have been laid off, while the remainder are shoveling the snow from the 6-mile road leading to the wood camp and from the 4-mile ditch which supplies water.

Red Cross.—This quicksilver property, 30 miles northeast from Redding, comprising 120 acres of patented land, and 2 claims adjoining, has produced some rich ore. Development work goes on under the superintendency of Bryan & Sisk, the owners.

Sierra County.

(From Our Special Correspondent.)

Comet.—Five men are working at this mine in Jim Crow Canyon. The capacity of the ditch has been increased, giving ample water supply. About 1,000 tons of ore are on the dump, enough to supply the mill all winter.

Sonoma County.

(From Our Special Correspondent.)

Socrates Quicksilver Mine.—Alexander Warner, of San Francisco, has brought suit against John Lloyd as assignee of John Robinson, to quiet title to this property. The mine, which is located on a 66-acre tract of patented land in Cinnabar District in the northern part of the county, is reported bonded to an English syndicate for $400,000.

Tuolumne County.

(From Our Special Correspondent.)

Draper Gold Mining Company.—The suit of this company against the Columbia Gold Mining Company in the Superior Court to quiet the title to the old Whitto Mine, has been decided in favor of the plaintiff.

Grizzly.—This mine is looking well; the work is confined to drifting both ways on the 800-ft. and north on the 700-ft. levels.

COLORADO.

Custer County.

Geyser.—This mine, which has the deepest shaft in Colorado, with the surface plant is to be sold at auction for debt. The company has been practically run on assessments, for the ore bodies found in depth have been small and unimportant.

Coal Miners' Strike.—The strike of the coal miners is still on and a resulting shortage of fuel is beginning to affect many of the State's industries. Many of the small metal mines have closed, and most big producers have only enough coal to last from 1 to 3 weeks. If the strike continues work will stop at the smelters

before long. Gas and electric lighting companies in Denver and other cities and towns are getting near the bottom of their coal bins. Street car companies are also alarmed. Everyone dependent upon power companies is becoming nervous. Throughout the State 4,000 miners are on strike.

El Paso County.

Practically every coal miner in the Colorado Springs district has stopped work. There are about 200 idle miners, divided principally between the Pike's Peak and Curtis mines north of Colorado Springs.

Gilpin County.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—E. H. Hazleton et al. to C. Weidenbrock, the Buckhorn Lode, lease and transfers and bond in sum of $12,000; R. Hastie to Bertha Gold Mining and Milling Company, a ranch containing 80 acres, situated in Pleasant Valley District; Next President Mining Company to G. H. E. Smith, release of lease on Next President Lode; Union Real Estate, Live Stock and Investment Company to Madison Real Estate and Investment Company, a section of land containing 160 acres, excepting the Mistletoe Lode claim.

New Machinery.—A complete hoisting plant is being installed on the Pocahontas property on Dory Hill by a syndicate of Denver men, and another plant is being installed on Silver Gulch property east of Black Hawk by G. D. Johnstone. The Allen Mill, at Idaho Springs, has given an order to Stroehle & Son, the boilermakers at Black Hawk, for a 60-H.-P. boiler. Stroehle & Son have been busy filling orders for boiler-stacks to replace those blown down by gales.

Carcasonne Mining Company.—An order has been placed for a 12-H.-P. gasoline hoist, of the Fairbanks, Morse & Company make, to be installed on the Carcasonne shaft. H. E. Corn, Russell Gulch, is manager.

Crown Point & Virginia.—The working force has been laid off during the installation of 2 gasoline engines to run the big hoist. Bad water soon destroys the steam boilers hitherto used. The property is operated by the Colorado & California Shareholding Mining and Milling Company, with W. H. Knowles, Idaho Springs, as manager.

Elk Park Mining and Milling Company.—This company is going to resume work on its property in Pine Creek District, after paying its debts. The property is large and is considered good, but has suffered by mismanagement.

Old Town.—A new ¾-in. steel cable has been put in and sinking is carried on with 3 8-hour shifts, the shaft being 310 ft. deep. It is to be put down several hundred feet at once. Good ore is opened, the last concentrating ore giving values of $24 per ton of 2 car-load lots. George K. Kimball, Jr., Russell Gulch, is manager.

Lake County—Leadville.

(From Our Special Correspondent.)

A. M. W. Mill.—This with another large mill —the Moyer—continues to produce the cleanest zinc product possible. The tailings are not shipped from either property, but are held for the future.

California Gulch Mining Company.—At 130 ft. east from the shaft a streak of lead ore was met that runs well in silver; also some streaks of manganese iron. These evidences of mineralization are being followed and upraising has started.

Dollie B.—Shipping will be resumed this week. Seventy-five extra men have been put to work in the different stopes and the shipments will come up to 100 tons per day.

Forfeit.—N. F. Leopold, of Houghton, Mich., operator of Lake Superior, and Messrs. Philip and John D. Ryan, of Denver, Colo., have secured this property consisting of 20 acres on Iron Hill adjoining the A. Y. and Winnie. The shaft is down but 50 ft., but will be sunk to the sulphide zone, estimated at 725 ft.

New Monarch Mining Company.—The sulphide shoot in the Little Winnie shaft has been developed several hundred feet and shows no signs of giving out. A new cage has been recently put in and now 100 tons a day of sulphide and silicious ore are hoisted from the Winnie alone. This is one of the largest stopes of ore ever opened in the camp.

Nil Desperandum.—Work will be resumed February 1st under the management of Thomas Ovens. The shaft will be sunk another lift of 100 ft.

San Juan County.

Kendrick-Gelder Smelter.—The auxiliary steam power plant at this smelter, in Silverton, has been installed and operations have been resumed. The smelter had made a good start, using water power for the blowing and other machinery, when a snowslide dammed the stream and caused a "freeze-up" of the furnaces. While the snow has not been very deep so far, ore hauling has almost ceased in the San Juan, because snowslides block the roads and endanger the teamsters. Most of the ore hauling and packing outfits have been moved out. The smelter is said to have ore enough to last until May, but unless there is an unusually early opening of the season, it will then be obliged to blow out for a month or so.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

There has been considerable uneasiness felt the last few days as to the probable coal supply because of the miners' strike in the districts that supply Cripple Creek. At one time it was reported that a number of the mines would have to close down on account of shortage of fuel, but it now looks as if this could be averted. Fuel is scarce, but a number of the mines have a considerable reserve on hand.

Mill Situation.—It is reported that the difficulty between the management and employees of the National and El Paso Mills, in Florence, is settled and that the strike is off. It is understood that an 8-hour day has been granted. These 2 mills have been closed down for several days on account of labor troubles.

Anaconda Gold Mining Company.—There are good reports coming from this property. Drifting goes on the 850-ft. level, where it is understood some good indications are met. The company has about $10,000 in the treasury and has an income of about $2,000 monthly from royalties paid by lessees. F. J. Campbell, of the Vindicator, is general manager and Milo Hoskins is superintendent.

Bull Hill Consolidated Company.—This company and the Mines Consolidated have declared dividends. The former, one of 1c. per share, making $15,000, and the latter 1c. per share, making $10,000. Both these companies are controlled by the Woods Investment Company.

Doctor-Jack Pot.—A dividend of 1c. per share is declared, the first one for this company. The company was only recently organized, it being the outgrowth of considerable litigation.

E. Porter Gold King.—Sinking is now in progress. The shaft is at present 700 ft. deep and with 200 ft. will be 900 ft. The property is situated on Gold Hill between the Grace Greenwood and the Lexington. James Murray is in charge.

Gold Coin Mines and Leasing Company.—The condition of the mine is reported to be excellent and the 850-ft. level is opening up well. The main shaft is now about 1,000 ft. deep.

Gould Mining and Milling Company.—It is reported that a lease on the Nil Desperandum and Rhinoceros claims has been granted to Josiah Winchester and A. M. Stevenson. These men until recently held the lease on the Doctor property. The claims are situated on Raven Hill not far from the Doctor ground.

Isabella Gold Mining Company.—At the annual meeting the following directors were elected: Nelson B. Williams, Geo. D. Kilborn, W. T. Doubt, M. Mills and W. C. Robinson. The reports of the officers show that the operations during the past year were decidedly disappointing. Mining resulted in a loss of about $150,000, which, after paying dividends amounting to $180,000, reduces the surplus from $568,065 to $237,907. At the end of the year the cash on hand amounted to $146,825. Work on the 11th, 12th and 13th levels so far has failed to disclose any amount of ore of shipping grade. Over 5,000 ft. of drifting has been done on these levels. A body of shipping ore has been opened up on the 3d level south. The manager states that at lease 2 of the veins on the 14th level should be in granite and he looks for an improvement there. Over 11,000 ft. of development work was done during the year on company account. The Lee shaft has been sunk 200 ft. deeper and the station at the 14th level is being cut.

Morning Glory.—The explosion of the air receiver on this property a few days ago did some damage, but no one was hurt and repairs were quickly made.

Nugget Mining Company.—This company has paid its first quarterly dividend of 1c. per share from royalties from leases on the Elizabeth Cooper Claim. The company has sold this claim to the Doctor-Jack Pot Company, for which it received 300,000 shares of the latter company's stock. The Doctor-Jack Pot Company has just declared a dividend of 1c. per share, which means that the Nugget Company will receive $3,000. The company still has a fractional claim on Grouse Mountain, but it is understood that efforts will be made to develop it on company account. A stockholders' meeting was called to order yesterday, but was immediately afterward adjourned, owing to the absence of some of the officers from the city.

Portland Gold Mining Company.—This company has paid its regular quarterly dividend of 6c. per share. A first water hoisting plant is being put in on the Portland No. 2 shaft. It has cylinders 24 by 48 in. and was manufactured by Webster, Camp & Lane, of Akron, O. A plant of 3 100-H.-P. boilers have also been put in. Flat cables will be used on the new hoist. It is understood that the Burns shaft is to be sunk another 100 ft.

IDAHO.

Blaine County.

Croesus.—According to W. G. Page, manager of this gold mine near Hailey, pumping and compressor machinery are to be installed and work resumed in the spring. A raise of 230 to surface from the adit level is contemplated and 10 stamps are to be added to the mill. The ledge is said to be 9 ft. wide. In the lower level the percentage of copper in the ore is increasing.

Shoshone County.

Buffalo Hump Mining Company.—This company has reduced its capitalization from $3,000,000 to $1,000,000, consequent upon the sale of its property at Burke to the Empire State-Idaho Mining and Development Company. The company has thus discontinued operations in the Coeur d'Alenes and will confine its attention to gold mining in the Buffalo Hump District. Chas. Sweeny is general manager of each company. The headquarters are in New York City.

MICHIGAN.

Copper—Houghton County.

(From Our Special Correspondent.)

Allouez.—The shaft on the Osceola amygdaloid lode is now 1,155 ft. deep and drifts have been run north and south of the shaft for nearly 2,000 ft.

Baltic.—The steel framework of the mill building is going up.

Calumet & Hecla.—The outside work on the new engine house for the man-car engines for Nos. 7 and 8 shafts, at the Hecla branch, is nearly finished. Work on the foundation for the engines is started. The engines are already on hand. The pattern and machine shop destroyed by fire some time ago is being refitted and the power changed to an indirect system. Work on the new timber and sawmill will be completed within 12 days. Negotiations are reported under way with Frederick Weyerhaeuser and associates for a controlling interest in nearly 100,000 acres of land in Douglas County, Wis.

Centennial.—No. 1 shaft on the Kearsarge amygdaloid lode is down 925 ft. At 175 ft. No. 2 shaft was started and has been raised to the overburden. The 2 shafts are about 90 ft. apart.

Elm River.—Drifting has started in No. 5 shaft on what is thought to be the Baltic lode. A heavy flow of water makes work difficult.

Quincy.—The third and last head at the new mill, giving a combined stamping capacity of 1,200 tons of rock per day, has gone into commission.

Old Colony.—The tunnel on this property is now in 1,625 ft.

Osceola Consolidated.—The trestle running from No. 1 to No. 2 shaft at the South Kearsarge branch is blown down. It was 900 ft. long and was used to carry rock from No. 2 to No. 1. The timber employed in the construction of the trestle was principally Washington fir.

Wyandot.—A diamond drill will be started on Section 28 to search for the Copper Range—Champion lode.

Copper—Ontonagon County.

Adventure Consolidated Mining Company.—The directors recently decided to build a 3-head stamp mill, with a capacity for handling 1,500 tons of rock daily, it is said. The mill will be built during the coming summer.

(From Our Special Correspondent.)

Belt.—Captain Dunn, who recently acquired an option on this group, is getting things ready at the location.

Mass Consolidated.—The Ridge shaft is down 600 ft. and No. 3 shaft 1,000 ft. east is down 900 ft. The 2 Sterling boilers will go into commission as soon as the stack, 24 in. in diameter and 50 ft. high, is erected.

MINNESOTA.

(From Our Special Correspondent.)

The State Railroad and Warehouse Commission has not yet passed upon the request of the 3 iron ore roads, asking a re-opening of the case under which the former commission reduced freight rates 24%. It is probable that the commission will make an order re-opening the case for the admission of additional testimony.

There is little exploration for iron ore going on in Minnesota at present. On the Vermilion the work is confined to the two large companies. The Minnesota Iron Company is still working along in section 25, near Ely, where some $65,000 has already been spent without result so far as known. On the Mesabi there is considerable work in progress about Mesaba Station, at the east end of the range, by several companies, including the Minnesota and Oliver. Westerly there is some work under way by O. D. Kinney in T. 58, R. 19, and elsewhere.

The new line of the Eastern Minnesota from near Duluth to the village of Virginia, Mesabi

Range, has been graded and the rails laid for a few miles. All ore from points east of Hibbing will come on the new line. When grain traffic is heavy in the fall months the new line will handle all the ore traffic of the road, and a double track is being put in from the junction of the new and old lines to Duluth.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Adams Mining Company.—This company is employing about 900 men and preparing for as large an output as in 1900. It is probable the mine will reach 850,000 tons. It has 5 active shafts, 2 of which have steel headframes, and is splendidly developed underground. Last month's payroll of this mine and the Spruce and Fayal, which join it, was $120,000.

Columbia Mining Company.—This name has been given the new mine in the town site of Virginia opened by Jos. Sellwood, H. Roberts and others. The company has made a contract with the Eastern Minnesota road under which all ore is to be hauled over the road in perpetuity. The company is sinking one shaft, which has reached ore and will mine this year as much as can be taken out. No underground development has been done. The ore is coarse, a Bessemer, generally speaking, and very wet. It runs about 62% iron. Capt. O. W. Wassin is in charge.

Fayal Iron Company.—This company's 3 shafts are all in commission. There are already more than 150,000 tons in stock. Compared to its output the mine stocks very little ore. Last May it had about 300,000 tons on surface, though it was able to ship that more than 1,250,000 tons.

Spruce Mining Company.—This company is erecting new and large buildings about the mine and is preparing for a very large product.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The basis for the last 2 weeks has been $24 per ton for 60% ore and $1 per ton additional for each per cent. or fraction thereof, above 60%. The highest reported price last week was $27 per ton for some of the Neck City ore, while the usual top price was $26.50 for the Oronogo and most of the choice lots sold at Joplin. A large number of the producers of the best grade zinc ore refuse to accept the prices offered and are contemplating a shutdown on February 2d, to continue through the month. The price for lead was $23 per 1,000 lbs. all the week. Following is the turn-in by camps of the Joplin District for the week ending January 19th:

	Zinc lbs.	Lead lbs.	Value.
Joplin	2,394,710	591,020	$43,525
Galena-Empire	1,053,960	287,620	19,789
Carterville	1,782,600	252,580	25,418
Oronogo	1,082,890	11,800	13,410
Webb City	611,270	22,430	7,240
Belleville	275,230	6,500	3,580
Aurora	1,170,480	27,310	13,117
Central City	211,930	14,790	2,661
South Jackson	714,550	17,740	7,558
Duenweg	13,900	80,670	2,008
Neck City	124,210	3,090	1,746
Peacock City	62,250	8,550	975
Cave Springs	167,480	13,910	2,302
Beef Branch	18,160	38,640	1,008
Ash Grove	.....	19,500	429
Stotts City	72,420	.....	941
Spurgeon	16,280	3,120	284
Spring City	81,480	28,650	1,550
Granby	367,000	25,000	3,700
Wentworth	31,770	.....	222
District total	10,252,970	1,437,620	$151,468
Total 3 weeks	27,092,960	3,574,540	$405,423

During the corresponding week last year the best grade zinc ore sold at $35 per ton and lead at $28 per 1,000 lbs. The output was less then by 39,850 lbs. of zinc and 308,490 lbs. of lead, but the value was greater by $29,645. For the first 3 weeks last year the sales were less than this year by 1,624,870 lbs. of zinc and 432,630 lbs. of lead, but the value was greater by $77,451. As compared with the previous week, the sales show an increase of 1,922,640 lbs. of zinc and 297,860 lbs. of lead, and the value an increase of $23,689.

Amsden Zinc and Lead Company.—The new Elizabeth Mill on the lease of this company on the Connor & Wise land, just west of Joplin city limits, was in operation 24 days from the time work began, and is called one of the best mills in the district, the building being unusually large and of the most solid character. It was built by day labor under the personal oversight of J. B. W. Amsden, the principal owner of the lease. The mine is another of the new prospects on the great north and south ore run developed within the year. There are over 2,000 tons of 20% ore on the dump and 600 tons broken in the ground, all of which was taken out in sinking and opening up the drifts.

Missouri-Kansas Zinc Miners' Association.—This association at a meeting on January 17th was merged in the new incorporated association of the same name, which has a capital of $100,000 and will purchase ore through its own buyer for export. The basis price for the association is $25 per ton for 60% ore, to members who contract ¼ of their total output for a year. The association proposes to export 1,000 tons per week and has a contract for this amount with buyers in Swansea, Wales, and with English metal manufacturers. Ore will be taken weekly and producers will be called on once a month in rotation for ¼ of their monthly output.

Nevada Spelter Works.—George E. Nicholson, of Iola, Kan., has bought material for 4 new furnaces for his gas smelter at Iola, giving him one of the largest smelters in the Kansas natural gas belt. Mr. Nicholson will continue to run his coal smelters at Nevada, Mo., unless the price of slack should go very high. Mr. Nicholson is also considering plans for a zinc rolling mill at Iola.

Warren Lead and Zinc Company.—At the Mildred Mine on the lease of this company, on the Boqua tract of the Norton ground, a great mine is being developed. The main shaft is 130 ft. deep, with 3 drifts at the 110-ft. level, all in a magnificent body of 66% zinc ore. There are over 1,000 tons of very heavy dirt on the dump which will probably go 22% ore and a 150-ton mill is to be erected. At 60 ft. south from the shaft a big cave 60 by 40 by 30 ft. was opened up last week, the walls of which are a solid body of jack encrusted with barytes. The owners have sunk 8 ft. in the floor of the cave and a still greater distance in the sides and head of the cave. The principal owners of the stock of the company are Washington Hyde and Chas. Devoe, of Warren, O.; W. H. Lyons, of Marion, O., and Homer P. Sewell, of Mansfield, O. The shaft is being sunk to 175 ft. so that the cave can be worked from below. A. L. Caulkins is the superintendent.

MONTANA.

Fergus County.

Leaking.—H. T. Kendall has bonded this claim and the Klondyke to a syndicate represented by R. T. Neill, for a large sum. In connection with this bond is the cyanide mill, having a capacity of 100 tons per day. The bond will extend until May 1st and Mr. Kendall will retain the management. At present the mill is supplied with ore from a large open cut on the vein, which is now about 150 ft. long by 125 ft. wide. The face of this cut, which is about 30 ft. high, shows a vein more than 100 ft. wide. The development work will consist of a 400-ft. tunnel following the general course of the vein with 25-ft. crosscuts to the lime footwall and porphyry hanging wall. Besides these crosscuts winzes will be sunk and upraises made. The ore yields readily to the cyanide treatment and the bullion from one shipment contained but 14% in silver. The mill has not been running to its full capacity for 2 weeks, as only the ore taken out in preparation for further development has been used.

Lewis & Clarke County.

Montana Mining Company.—The December output was: Gold, 1,470 oz., and silver, 8,590 oz., obtained from 1,521 tons of ore crushed in the mill, and from 11,956 tons of tailings from the dams. The estimated realizable value of the produce of the crushings is $5,300; and of tailings, $29,100. The treatment of 11,956 tons of tailings cost $13,200. The estimated income is $36,000 and the expenses were $29,900, leaving a net profit of $6,100. The tailings plant shut down for the winter on December 31st.

Wickes County.

The town of Wickes, between Helena and Butte, was almost wholly destroyed by fire January 21st. The town is situated in a gulch, and the 125 or 150 frame buildings were burned. Most of the inhabitants had moved away with the closing of the silver mines. No loss of life is reported.

NEW MEXICO.

Reported Diamond Discoveries.—Wide publicity has been given by the daily press to the reports of diamonds having been found near El Capitan. The reports stated that a prominent official of the greatest diamond mining company in the world was to examine the deposits. This official has said that he was never even asked to examine the so-called diamonds, and now comes this statement from A. S. Greig, superintendent of the El Paso & Northeastern Railroad, in reply to telegrams and letters from persons in distant parts of the United States, regarding the alleged wonderful discoveries: "I have received several telegrams which give me the impression that I am held responsible to some extent for the report that diamonds have been found at Capitan. This is a mistake. I have seen apparently worthless crystals which were reported to have been found near Capitan, but have had no encouragement that diamonds have or can be found in that vicinity, and take this means of advising any persons who may, on the strength of representations attributed to me, believe that genuine diamonds are found there or likely to be found there, that I have no belief that such is the case. If anyone is looking for legitimate investment he will find that in the coal and iron deposits and precious mineral prospects which abound in that vicinity."

Grant County.

Lord Nelson.—James A. Cerrillos has leased and bonded this mine at Central, from James Clegg, and will begin development. New machinery will be installed. The mine is a copper and lead proposition.

Santa Fe County.

Bender.—John N. Tholl has transferred to Thomas H. Bates, of Dallas, Tex., ½ interest in this group of mines in the New placers district. The group consists of the Cuchilla, Goldsmith, Baby Shoe, Bates and Pallam claims.

NORTH CAROLINA.

Keoroor Mining Company.—This New York company recently bought the Deep River gold mine near High Point, 40 miles from Union Hill, the sale being made by J. A. Martin & Son. The capital of the company is said to be $250,000, and the plan is to develop the property as rapidly as possible.

Person County.

(From Our Special Correspondent.)

Globe Mineral Exploration Company.—This London, Eng., company has leased a property near Virgilina and will develop it at once under the management of R. H. Jeffery. There is much activity in this copper district at present and some fine shipments have been made.

PENNSYLVANIA.

Anthracite Coal.

Several men implicated in the riot at Oneida colliery during the strike last fall have been found guilty of rioting and attempting to demolish mine property. They are George Tomshick, Michael Martin, Thomas Harcur, Michael Callehan, Jacob Renmeyer, John Hoffer, Bertie Horrilla, Chas. Cavitch and Stephen Cornich. Harcur was also found guilty of assault and battery, aggravated assault and battery, and assault and battery with intent to kill. Renmeyer and Horrilla were found guilty of assault and battery.

Brookside.—The contract for what will be the largest shaft in the anthracite region has been let to Osborne & Williams, of Mt. Carmel. The shaft will be at this colliery at Lykens, and will be 30 by 14 ft. and 1,850 ft. deep. The shaft will be sunk outside of the outcrop through red shale to the basin and a tunnel will be made 1,200 ft. long to the vein. The opening will take 5 years to complete. It will have an air way, a water way and 2 coal ways. The present deepest shaft in the Schuylkill coal region is at Wadesville, and is 1,600 ft. deep.

Cranberry.—At this colliery near Hazelton 1,000 men and boys quit work last week because the company did not have a payday on January 15th, as they wished, though it announced a payday on January 19th.

Henry Clay.—Many surface changes are to be made at this colliery near Shamokin; among others a lot-scraper line is to be built.

North American.—This washery at Wm. Penn colliery, in course of construction the past 8 months, by Scranton men, is now giving employment to 150 men and boys. They expect to ship 40 cars daily. It is one of the largest washeries in the anthracite region. John G. Scott is superintendent.

Richards.—The output of this colliery near Shamokin has fallen off greatly, though the mine has been opened but a few years.

Williamstown.—This colliery, near Shamokin, employing 1,000 men and controlled by the Pennsylvania Railroad, stopped work last week because a local branch of the miners' union demanded that the laborers and timbermen should have a 10-hour day instead of 8. H. McKay is superintendent.

Bituminous Coal.

Pittsburg brokers, according to a press dispatch, have concluded negotiations with J. P. Morgan & Company, of New York, for the transfer of 75,000 acres of coal lands in Greene County. The seller was a syndicate of Pittsburg and Westmoreland County men, of whom J. V. Thompson, of the First National Bank of Uniontown, is the leader. The coal is a steam and coking coal. It is said the Morgan company acquired the land for the future use of the Federal Steel Company, National Tube Company and other concerns, in which the Morgan and Rockefeller interests predominate. The Thompson syndicate has been acquiring coal lands in the district mentioned during the last 2 years. The average cost was $75 an acre, but, according to newspaper stories, it was sold to J. P. Morgan & Company at $200 an acre.

(From Our Special Correspondent.)

Briar Hill Coal and Coke Company.—This company, which has large plants along the Monongahela River, has purchased the John F. Jones plant at Glen Falls for $105,000. It is announced, though not officially, that the same company has bought every mine along the Monongahela, between Clarksburg and Monongah. Edward and Clarence Watson, of Fairmont are the principal stockholders in the Briar Hill Company.

Francis Rocks has retired from the Rocks Coal

Company, his interest being taken by his partner, W. F. Soisson, of Connellsville. The latter will continue the business in conection with the Lang Coal and Sand Company.

SOUTH DAKOTA.

Custer County.

(From Our Special Correspondent.)

Daly.—The Chicago Mica Company has purchased this mica mine north of Custer. A shaft is being sunk 100 ft. The first car-load of mica was shipped from the mine this week, to the company's works at Valparaiso, Ind.

University Company.—This company has acquired 3 mining claims on Spring Creek, formerly owned by James Verkes, of Oreville, and a 5-stamp mill. An incline 30 ft. deep shows several small ledges of free milling ore. The company has also purchased a placer claim on Tenderfoot Creek.

Lawrence County.

(From Our Special Correspondent.)

Central City.—This is the liveliest mining camp in the Black Hills at present. The starting of the De Smet and Caledonia mills, the prospective building of another large cyanide plant, and the successful operation of a number of small plants are responsible. All the old buildings in the town are occupied and a newspaper has started.

Golden Reward Company.—It is stated that this company will erect a 200-ton cyanide plant on the site of the old chlorination works destroyed by fire over a year ago. The plans are being made.

Hawkeye.—It is reported that the Homestake Mining Company has purchased the properties of the Hawkeye Mining Company, of Des Moines, Ia., joining the Homestake on the east. There is a mill and water right and some ore blocked out. The reported consideration was $50,000.

Shawmut Mining Company.—This Boston, Mass., company has decided to put in 2 more Huntington mills, making 3 in all in Blacktail Gulch. There are 6 40-ton cyanide tanks giving a capacity of 100 tons per day. The extra Huntington mills will be in operation by March 1st. There are over 2,000 ft. of workings on the Esmeralda property and shoots of cement ore have been opened. The company recently purchased the Fairview and Great Western, which adjoin the Esmeralda on the west. The general superintendent of the mine is James Terry, formerly State mine inspector and the company's agent is E. F. Seaver, of Deadwood. The officers of the company are: President, Edson E. Dewey; vice-president, Walter B. Farmer; treasurer, Benj. L. Heath; secretary, H. B. McKinney, all of Boston.

Pennington County.

(From Our Special Correspondent.)

Etta.—F. P. Williams, of Hill City, has resigned as custodian of the Harney Peak Tin Company and will attend to shipping of spodumene from the Etta Mine, owned by that company.

Gopher Mining Company.—The new gasolene hoist is about ready. Work for 3 months past in the shaft has been on a 30-in. ledge of free milling ore. The Sunnyside Mill is treating the ore.

TEXAS.

Jefferson County.

The flow of oil at the great gusher at Beaumont is now under control. Prominent oil men from Pennsylvania have inspected the well and the Standard Oil Company has had agents on the ground. The excitement over the strike has decreased, but residents of the region have set high prices on their lands and consequently not much property has changed hands and the number of leases made is likewise small. Opinions vary as to whether the oil can be refined so as to compete with oil from the Ohio, Pennsylvania and West Virginia fields.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—During the week ending January 19th there was sent forward from the several smelteries 22 cars, or 907,046 lbs., of silver-lead bullion; 4 cars, or 193,781 lbs., of copper bullion. For the same week the ore and concentrate product shipped from the different camps to smelteries outside the State aggregated 79 cars, or 3,337,000 lbs. The copper bullion includes 1 car, or 38,460 lbs., from the Dixie Mine in Washington County.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—For the week ending January 19th there were sent forward from the 3 Tintic railroad points 109 cars of ore and 13 cars of concentrates, made up as follows: Centennial-Eureka, 23 cars; Gemini, 30 cars; Godiva, 8 cars; Uncle Sam, 5 cars; Humbug, 1 car; Mammoth, 7 cars ore and 8 cars concentrates; Grand Central, 9 cars; Ajax, 3 cars; Lower Mammoth, 7 cars; Carissa, 7 cars; Swansea, 5 cars; Tesora, 3 cars; Morning Glory, 1 car; and from Eureka Hill, 5 cars concentrates.

Summit County.

(From Our Special Correspondent.)

Park City Shipments.—In the week of January 19th the smelting product marketed through the Mackintosh Sampler was 3,236,540 lbs., representing the output of the camp. The several contributors were: Silver King crude, 1,067,310 lbs.; concentrates, 276,150 lbs.; Anchor crude, 235,610 lbs.; concentrates, 486,780 lbs.; Daly-West crude, 408,800 lbs.; concentrates, 422,850 lbs.; Ontario concentrates, 339,240 lbs.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Gold Ledge Consolidated Mining Company.—John A. Finch, of Spokane, has purchased a large block of the stock, and a contract has been let to Spokane men to drive a tunnel 400 ft. to tap the vein 120 ft. below the 130-ft. (lowest) level. W. M. Crummer, superintendent of the Quilp Mine, will have charge. Work on the tunnel started January 16th. Machinery has been shipped from Spokane.

Old Hickory Gold Mining Company.—Fleetwood Ward, of Ward, Denslow & Company, New York City, has been supervising development work. The Victor and New York claims show a contact quartz vein traceable for 3,000 ft., with a syenite hanging and slate footwall. The country formations are diorite, syenite and limestone. A tunnel has been driven upward of 150 ft., and some quartz cut through, which is not believed to be the main vein. Assays from surface floor shows values up to 4½% copper; also silver and gold. A shaft is sinking on a vein, from 9 to 15 ft. wide, near the south end of the Victor claim. On the Kid a vein 5 ft. wide, with a porphyry hanging and diorite footwall, is exposed by a shaft over 20 ft. deep. The quartz runs from $2.20 to $48 per ton, mostly in gold, with a little in silver. The Ward shows a vein between diabase and limestone. The croppings run about $18 in gold and $2 in silver. A shaft is down 14 ft. On the Denslow a shaft has been sunk. The Old Hickory was incorporated under the laws of Arizona, but its principal place of business is New York City.

Palo Alto.—This claim is closed down, pending possible changes in the administration. Recent crosscutting located the vein on the tunnel level, close to the bed of Granite Creek, the vein at 40 ft. showing from 4 to 5 ft. of quartz. A drift was run 32 ft. Most of the samples run $4 or $5 per ton. The new work will require money, hence the proposed reconstruction.

Republic Power and Cyaniding Company.—The new Griffin mills are arriving and being installed. Mr. Jackling expects to have the mill running on full capacity by March 1st. About 4,000 tons of ore have been cleaned up to date.

WEST VIRGINIA.

Fairmont Coal Mining Company.—This company is the new selling agency of most of the mines of the Fairmont region. The officers are: C. W. Watson, president; John A. Clark; vice-president; George DeBolt, secretary, and M. L. Hutchinson, treasurer. The president will be assisted by J. H. Wheelwright and J. O. Watson, Jr. The executive committee is J. A. Fickinger, chairman; C. W. Watson, J. A. Clark, M. L. Hutchinson and J. H. Wheelwright. The board of directors consists of C. W. Watson, J. A. Fickinger, J. A. Clark, M. L. Hutchinson, J. H. Wheelwright, W. P. Young and F. S. Landstreet.

The new organization will handle the output of coal and coke from the following Fairmont mines: Montana, Monongah, New England, Gaston, Pennois, Anderson, Middleton, Chiefton, Highland, Worthington, Enterprise, Melrose, Viropa, Ehlen, Solon, Harbert, Gypsy, Maulsby, Meadowbrook, Farnum, Glen Falls, Denham, Lynch, West Fork, Fairmore, Columbia, Ocean, Simpson, Beechwood, Murray and Luther.

Offices have been established in Boston, New York, Philadelphia, Chicago and other cities. The company controls an output of nearly 6,000,000 tons annually and has an equipment of 5,800 individual cars.

(From Our Special Correspondent.)

The Mill Creek Coal and Coke Company, of Mercer County, and the Sun Coal and Coke Company, of Fayette County, are each erecting a large Capell fan, the first of this type to be erected in this region.

Several new shafts are to be sunk on White Oak Creek to tap the Loup Creek seam of coal which lies at a depth of about 400 ft..

Fayette County.

(From Our Special Correspondent.)

The preliminary survey on the Short Line Railroad between Kingwood and Rowlesburg is completed and the work of grading is beginning. This road will open up some good undeveloped coal-fields.

Boomer Coal Company.—Owing to the large amount of development work at this company's plant, C. C. Sharp has taken charge.

Kanawha County.

Commonwealth Coal Company.—This company, with principal office at Baltimore, Md., has secured 2,800 acres of coal land lying about 20 miles from Charleston, and intends to develop it. This will require the building of 3½ miles of railroad to connect with the Chesapeake & Ohio. About 75 houses will be erected and an electric plant installed. The price paid for the property was $75 an acre. The incorporators are Edward Dennis and Messrs. H. C. Kilmer, Hance W. B. Reid, Wm. D. Allen and Edgar B. Browing, all of Baltimore, Md.

Monongalia County.

(From Our Special Correspondent.)

Union Improvement Company.—This company, of Morgantown, has purchased several thousand acres of gas territory in Battle District, paying in the neighborhood of $100,000 for it. There are 6 wells on the tract, with a daily production of 16,000,000 ft. of gas. These wells are plugged and will not be drawn upon till the present gas field supplying Morgantown is exhausted.

WYOMING.

Fremont County.

Federal Gold Mining Company.—This company was recently organized in Chicago to operate the Carissa gold mine. The company is headed by J. C. Spry.

FOREIGN MINING NEWS.

AUSTRALASIA.

New South Wales.

Broken Hill Proprietary Company.—This company reports that during the four weeks ending January 2d the total products of the company's refinery were 454,323 oz. fine silver, 3,885 tons soft lead and 53 tons hard or antimonial lead.

New Zealand.

The official statement gives the exports in October at 33,617 oz. gold and 11,809 oz. silver; a decrease of 2,940 oz. gold and 18,969 oz. silver, as compared with October, 1899. For the 10 months ending October 31st exports of gold were 318,246 oz. crude, a decrease of 4,837 oz. from 1899. The exports in 1900 were equal to 285,057 oz. fine gold, or $5,992,122.

Queensland.

The Mines Department reports the gold output for November at 79,470 oz. crude, being 4,304 oz. less than in November, 1899. The yield in 1900 was equal to 54,313 oz. fine gold, or $1,222,650.

EUROPE.

Russia.

Siberian Gold-fields Development Company, Limited.—The Financial Agent of the Russian Government in London has made the following communication to the press with regard to the above company:

"It has come to the knowledge of the Imperial Russian Minister of Finance that the board of the Siberian Gold-fields Development Company, Limited, formed this year in London with an issue of 1,000,000 £1 shares, while avoiding offering the same for public subscription, is allotting the shares privately in England, at the same time assuring the shareholders that a concession for working gold-fields belonging to his Imperial Majesty's Cabinet and situated in the Nertchinsk district, Siberia, has been granted to the company by the Imperial Government.

"As a result of full inquiries, it appears that the above-mentioned company has only concluded through its representative an arrangement with the Russian concessionaire, the merchant Pershine, for the transfer to it of the rights under his contract with the Cabinet for the working of the said gold-fields. This arrangement, in spite of the assurance of the board, has not been, and indeed could not be, confirmed by his Majesty's cabinet, seeing that, in virtue of the laws in force in Russia, and sanctioned by international treaties, no foreign stock company whatever is entitled to carry on operations in Russia otherwise than with the due authorization to do so of the Imperial Government.

"In order to avoid any misunderstandings and to prevent the British public from being led into error and incurring loss thereby, I am directed by His Excellency the Secretary of State, M. de Witte, to declare that the Siberian Gold-fields Development Company, Limited, has not only not received Imperial sanction in accordance with Russian law, but, further, that the Imperial Russian Government, while ever ready to favor reputable foreign commercial and industrial enterprises in Russia, will not authorize, in any case, the Siberian Gold-fields Development Company, Limited, to operate within the limits of the Empire, seeing that this company, both in regard to its origin and composition and the action of its board, does not offer sufficient guarantees of its standing."

COAL TRADE REVIEW.

New York. Jan. 25.

Anthracite.

The hard coal trade is still active, though it begins to show the effects of a mild winter. The collieries are running full time, baring shutdown from labor troubles or accidents, and are disposing of all the coal mined. The recent cold wave proved very short-lived along the seaboard, though it brought the lowest temperatures of the winter. In the interior the cold was particularly severe and it is at interior ports that coal is most wanted. Another month of mild weather will probably see stocks accumulating, but in view of the possibilities of labor troubles the mines will probably get out coal in excess of immediate needs. There continue to be scattered strikes at the collieries, some of which start from trivial causes, and are discouraged by officials of the United Mine Workers. The miners, however, are not likely to forget their victory of last fall for some time.

In the Northwest supplies of coal on the docks at Duluth are very low, and a considerable tonnage is going forward by rail to points west of Chicago. In Chicago territory there is a fair demand, fluctuating according to the weather. Chestnut size, as for several winters past, is very scarce. Business at the lower lake points is good and there is a liberal movement of coal into Canada. In the East demand continues brisk at inland points, but along the seaboard has fallen off. Consumers at Boston and other points beyond Cape Cod are receiving fair supplies and we no longer hear of spot coal commanding a premium at New York Harbor. For the balance of the winter the seaboard market will be governed by the weather.

That old and much-discussed topic of a central selling agency has the floor again. There is more excuse for discussing it than before and more to be said of its prospects. Everything indicates that the independent operators still mining are to come more directly under the control of the dominating interests in the trade. With control in the hands of but one or two interests there is no need of the present complex machinery of distribution and undoubtedly much of this will be discarded. It is not improbable that a territorial system of distribution will be adopted as far as possible, as has been done in the seaboard soft coal trade. Certain roads will ship to certain consuming territories, thus doing away with several sets of sales-agents, etc., in the same field. It is also possible that the whole trade will be so controlled that one authority will have power of distribution and of adjusting supplies to market needs.

We continue to quote free-burning white ash coal, f. o. b. New York Harbor ports, as follows: Broken, $3.75@$4; egg, $4.25; stove and nut, $4.50; pea, $3; buckwheat, $2.25@$2.50.

Bituminous.

The Atlantic seaboard soft coal trade is dull. There is plenty of coal offering, even of the better grades. It is currently reported that there is a large amount on the tracks near the seaboard shipping ports waiting for vessels and that a considerable amount is in transit to tidewater. The main-line roads have consequently had blockades, partly because of the backing up of loaded cars from the shipping ports and partly because of poor service by the roads themselves. These blockades caused embargoes to be placed on several ports with quite a number of shippers.

Little is heard of new business. A lot of old contracts are still in force and the operators are using these as a basis for shipments. It is not likely that there will be much new business taken until the main line roads make known the new freight rates and this may not be for a month yet. Another thing that discourages new business is the probability of labor troubles at the collieries in the spring and the possibility of different mining rates.

Trade in the far East is dull. Some vessels on demurrage are reported at points beyond Cape Cod with cargoes still unsold. Along Long Island Sound trade is probably easier to-day than it has been for two years. New York Harbor trade is fairly active, but there is coal enough coming in to supply all demands. All-rail business shows a cutting down of orders, though regular and fairly large shipments are still made to this territory.

Transportation from mines to tide is slow and irregular. Lack of motive power and blockades are given as causes. Car supply at the collieries varies; individuals are given preference according to the dispatch they show in unloading cars at tidewater.

In the coastwise vessel market vessels are very scarce at the lower ports—just why nobody seems to know; there is talk of off-shore business taking them, of vessels being tied up for the winter or being held at unloading ports. Anyway, few vessels are arriving at the shipping ports and these are of the largest size, and find few orders waiting for them. Coastwise freight rates continue remarkably low. We quote from Philadelphia as follows: Providence, New Bedford and the Sound, 65c.; Boston, Salem and Portland, 75c.; Wareham, 85c.; Lynn, 90c.; Newburyport, $1; Portsmouth, 80c. From the farther lower ports freights are 10c. higher.

Clearfield coal is selling at $2.40@$2.65, f. o. b. New York Harbor ports, according to quality, though coal under demurrage which must be sold is going as low as $2.25. The better grades sell at regular figures—$2.85 or over.

Birmingham, Ala. Jan. 21.

(From Our Special Correspondent.)

The production of coal in Alabama is being increased right along. There is still demand for every ton that can be gotten out and the point has been reached where railroads have begun to look out for their own supplies. The operators announce that never before was there such a demand for fuel as now. Good prices prevail and the miners are working steadily. There are no labor troubles in the State to amount to anything, and more men are being given steady employment than ever before.

The colliery on the Stout Mountain Branch of the Louisville & Nashville Railroad, in Blount County, which was established but a few months since, is now producing more than 300 tons a day, and this production is being rapidly increased. The Louisville & Nashville Railroad is using almost all of this coal for its own use.

The miners anticipate another advance in wages next month. The wages of the miners, as has been stated before, is conditioned on the condition of the pig iron market. There is much coal being used by the furnaces and much coke is being manufactured in this district.

Chicago. Jan. 22.

(From Our Special Correspondent.)

Anthracite coal is in no better demand, sales being mostly for small quantities and quick delivery. The market is in a state of lethargy awaiting some zero weather to give it a stimulent, for seemingly nothing else will. The temperature has not been lower than 8° above in Chicago so far this winter, and for the most part we have had a very mild temperature and therefore the consumption of hard coal has been limited. Receipts by rail since January 1st are fair, but show a falling off from last year same period. Egg coal is again in limited supply. Circular prices are $5.75 for grate and $6 for egg, stove and nut.

Bituminous coal is in an over supply and conditions are bordering on demoralization. The demand is not nearly up to expectations, the quantity of coal shipped here far exceeding demand, and with a very mild temperature the market is not at all profitable to the shipper, the consumer getting by far the best of present conditions. The buying of the week has been small, but few contracts of any importance having been closed.

Cleveland, O. Jan. 23.

(From Our Special Correspondent.)

The continuance of the warm weather, which is remarkable for this climate, has caused a very light business in the coal trade. The sales have seldom been lighter during the latter part of December and the first of January than in the four weeks just closed. There had been some talk of stiffening prices, but slack demand prevented any movement of that sort. The sales to the industrial concerns have not been so heavy in view of the light operations of some of them during the last few weeks. These two influences together have made the business anything but satisfactory. The car supply for the movement of coal has been all that could have been desired, no railroad being unable to fill the orders from the shippers.

As to the lake shipment, there is a very decided tendency to the belief that next season's contracts will not be made for two months. This does not prevent a great deal of discussion of the possible rates at which it will be carried, and all tendencies are toward a reduction next season, from what was paid last season.

Pittsburg. Jan. 23.

(From Our Special Correspondent.)

Coal.—The mines in the Pittsburg District are not running as full as desired this week, owing to a scarcity of railroad cars. The two combinations are anxious to produce as much coal as possible during the next two months, as there is certain to be trouble over the mining rate if the miners insist on the demands made at the various district conventions of the United Mine Workers. If the conservative element obtains control of the national convention which opened in Indianapolis on Monday the demands will be considerably modified. At the Pittsburg District convention, which was the most representative ever held here, it was unanimously decided to instruct the delegates to insist on an advance of 10c. a ton in the pick mining price and to demand three-fifths, instead of one-half of the pick mining price, for loading after the machine. Many new features were introduced in the proposed scale which will materially increase the cost of production if agreed to by the operators. An increase of 12½% is asked in the wages of the drivers and all inside day hands in the mines. The number of miners in the Pittsburg District is estimated at 22,000, but this has been swelled to 45,000 by adding the miners of the Irwin Field to this district. The report of the secretary at the district convention showed that of this number less than 10,000 are members of the United Mine Workers.

Connellsville Coke.—The highest weekly production for several months was reached last week in the Connellsville region. It was 194,675 tons. The shipments were somewhat lower than the previous week. Prices remain unchanged. Standard Connellsville furnace coke is quoted at $1.75 and foundry at $2@$2.25. Outside furnace coke is still quoted as low as $1.40 and foundry at $1.65@$1.85. Of the 20,923 ovens in the region 16,696 are active and 4,227 are idle. The shipments for the wek aggregated 9,257 cars, distributed as follows: To Pittsburg and river tipples, 3,789 cars; to points west of Pittsburg, 3,544 cars; to points east of Connellsville, 1,924 cars. This was a decrease of 71 cars.

Foreign Coal Markets.

Very little export business is noted at present, and such shipments as are being made are on old contracts. Little new is heard from the foreign markets, and those of the European continent are still in an unsettled state.

Tonnage is freer, owing to the release of British transports. Consequently exporters look for lower ocean freight rates. As yet few new charters have been booked from the United States. We note a steamer has been fixed from Norfolk to Manila at $8.50, the same rate taken last November; also one from Baltimore or Virginia ports to Rio Janeiro at 17s. ($4.08), February sailing. No coal charters to European ports are noted.

Messrs. Hull, Blyth & Company, of London and Cardiff, report, under date of January 12th, that there is no change. Demand continues and prices are well maintained. Quotations are: Best Welsh steam, $4.80@$5.04; seconds, $4.56; thirds, $4.44; dry coals, $4.20@$4.44; best Monmouthshire semi-bituminous, $4.32@$4.56; seconds, $4.26; best small steam coal, $2.94@$3; seconds, $2.40@$2.58; other sorts, $2.34.

These prices for Cardiff coals are all f. o. b. Cardiff, Penarth and Barry, while those for Monmouthshire coals are all f. o. b. Newport, exclusive of wharfage, and are for cash in 30 days, less 2*% discount.

There is still a plentiful supply of tonnage, and rates have further fallen. Some rates noted are: Marseilles, $1.50; Genoa, $1.66; Naples, $1.74; Port Said, $2.04; Singapore, $3.96; St. Vincent, $1.80; Buenos Aires, $2.76; Rio Janeiro, $3.12.

SLATE TRADE REVIEW.

New York. Jan. 25.

The list of prices per square for No. 1 slate standard brand f. o. b at quarries in car-load lots, is given below:

Size, inches	Monson or Brownville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Chap'n Keys'ne	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.50	3.50	3.00	3.00	....	5.10	3.00	....	.....
24 x 12	6.60	3.50	3.00	3.00	3.80	5.25	3.00	3.75	.....
22 x 12	6.60	3.50	3.25	3.00	....	5.25	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3.00	4.00	5.25	3.00	4.00	.....
20 x 12	6 90	3.75	.....	3 00	....	5.25	3.00	3.75	.....
20 x 11	6.80	.....	.....	3.25	.....	5.25	3.00	.....	.....
20 x 10	6.80	4.25	3.50	3.25	4.00	5.35	3.00	4.25	10.50
18 x 12	6.80	3.75	.....	3.00	.....	5.25	3.00	3.50	.....
18 x 11	7.00	.....	.....	.....	.....	.....	3.00	3.75	.....
18 x 10	7.00	4.25	3.50	3.25	4.00	5.35	3.00	4.00	10.50
18 x 9	7.00	4.50	3.50	3.25	4.00	5.35	3.00	4.25	10.50
16 x 12	6.80	3.75	.....	3.00	.....	.....	2.90	3.50	.....
16 x 10	7.00	4.00	3.50	3.25	4.00	5 25	2.90	4.00	10.50
16 x 9	7.00	4.25	.....	3.25	4 00	5.35	2.90	4.25	10.50
16 x 8	7.00	4.50	3.50	3.25	4.25	5.35	2.90	4.25	10.50
14 x 10	6 60	3.75	3.25	3.00	.....	5 25	2.70	3.75	10.50
14 x 9	6.50	.....	.....	.....	.....	.....	2.70	3.75	10.50
14 x 8	6.60	3.75	3.25	3.00	4.00	5.10	2.70	4.25	10.50
14 x 7	6.40	3.75	3.25	3.00	3.75	5.10	2.50	4.25	10.50
12 x 10	5.75	....	.	....	.. .	...	2.50	3.25	.....
12 x 9	5.60	.....	.....	.....	... .	.....	2.50	3.25	.....
12 x 8	5.50	3.50	.....	2.85	.....	4.85	2.50	3.50	9.00
12 x 7	5.00	3.25	.....	2.85	3 25	4.85	2.00	3.50	9.00
12 x 6	4.80	3.25	....	2.85	3.25	4.75	2.00	3.50	8.50

A square of slate is 100 sq. ft. as laid on the roof.

The continued mild winter permits of longer operations at some of the leading quarries than was the case last year. Roofing slate has suffered in price, but it is generally believed in the trade that last week's meeting of manufacturers in the Bangor Region will improve the situation somewhat.

Shipments are smaller, owing partly to the limited car supply, but chiefly to the curtailed demand for the size of roofing slate now being made by many of the quarries.

In Maine, where the output is confined to a small number of people, one of the leading concerns, the Monson-Burmah Slate Company, has taken the initiative in specializing their operations to the manufacture of mill stock and leasing their quarry by special arrangement to another concern. At the present high cost of

producing rough slate and comparatively low market value, it would perhaps be better to engage in the manufacture of stock goods, but not before one was sure of a certain number of customers, as slate mill stock is meeting with keen competition by cheap marble and stone goods. The roofing slate shipments by Maine producers to consumers outside of New England, in 1900 amounted to 3,129,461 lbs., or 78 carloads. Some of this slate went to Canada.

With regard to export business, it may be noted that the strike at Lord Penrhyn's quarries in Wales is still on, and is likely to continue for some time. In fact, but a very small number of the strikers care to return to work, while others have gone to work in other industries. Among the exports from New York so far this month we note 36 car-loads of roofing slate for Australasia, 21 car-loads for Great Britain, and 6 car-loads for Copenhagen, Denmark. Some mill stock has been sent to Bristol, England. Freights promise to be easier, as tonnage is becoming freer.

IRON MARKET REVIEW.

NEW YORK, Jan. 25, 1901.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending Jan. 26, 1900.		Jan. 25, 1901.		From Jan., '00.	From Jan., '01.
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
An' racite & Coke.	254	288,325	201	244,150	1,070,920	871,966
Charcoal.	30	7,925	32	7,225	29,435	25,803
Totals..	284	296,250	233	251,375	1,100,355	897,769

The sensation of the market this week has been the heavy purchases of raw iron by the Carnegie Company, which are given at length in our Pittsburg letter. This fixes the price of Bessemer pig iron for a time—which is perhaps what the Carnegie people wanted to do—and also keens a quantity of iron away from other purchasers, which might also be a desirable result.

There is no end of foolish talk still current about the "steel war." Assurances from either party that there is nothing of the kind in sight, seem to be of no account with the rumor-spreaders.

The demand for finished material continues large. This is especially the case with bridge and structural steel. In both there is a good business in sight.

One point, which is generally neglected in speculations on the future of the iron trade, is the growing scarcity of good lumber. With our usual recklessness we have been wasting our timber resources and will very soon be forced to economize and use steel wherever we can.

Birmingham, Ala. Jan. 21.

(From Our Special Correspondent.)

The conditions of the Alabama pig iron market seem to be steady and the prospects are bright. Sales are good-sized and the production in this State is keeping up well. Gadsen Furnace, belonging to the Alabama Consolidated Coal and Iron Company, will probably be the first furnace not now in blast to resume operation. The Woodstock Iron Company, owner of the furnaces at Anniston, is completing arrangements to blow in the two furnaces almost ready at that point. Talladega Furnace will in all probability be ready to go into operation in the near future. Mr. Eugene Zimmerman, of Cincinnati, has withdrawn from the company owning this furnace and other property, and the same is now under control exclusively of Ladenburg, Thalman & Company, of New York. Jenifer Furnace is almost in shape also.

There is not 50,000 tons of pig iron on the warrant yards in this State. The domestic market is improving slowly, while local consumption is keeping up very well. The steel plant at Ensley is doing well. Besides regular contracts held by this concern, some of its surplus steel is being worked off steadily now. The demand is almost equalling the production and preparations are being made to place in operation the balance of the open-hearth furnaces in the plant. During the past week 2 lots of steel billets, aggregating something like 3,000 tons of steel, were shipped from Ensley to Glasgow, Scotland. The nail and rod mill at Ensley is in full blast. The Alabama Steel and Wire Company has purchased the plant of the Raible Keg Factory and will hereafter manufacture its own kegs and boxes for nails and other products. The plow factory at Ensley is also working steadily.

The following are quotations given on pig iron this week: No. 1 foundry, $11.50@$12.50; No. 2 foundry, $10.50@$11.50; No. 3 foundry, $10@$10.50; No. 4 foundry, $10; gray forge, $9.50@$9.75; No. 1 soft, $11.50@$12.50; No. 2 soft, $10.50@$11.50. Steel prices are satisfactory and foundry work and brass work plentiful, with good prices prevailing.

Chicago. Jan. 22.

(From Our Special Correspondent.)

Pig Iron.—The demand for pig iron has increased considerably, the buying being general. Most all kinds of iron were in demand and both Northern and Southern brands in about equal call. Some good-sized contracts have been placed, a few remaining upward of 5,000 tons having increased the aggregate of week to high figures, though it is said that concessions in price were made on large business. Small lots bring prices as quoted herewith: Lake Superior charcoal, $18.50@$19; local coke foundry, No. 1, $15.25@$15.75; No. 2, $14.75@$15.25; No. 3, $14.25@$14.75; local Scotch, No. 1, $15.25@$16; Ohio strong softeners, No. 1, $16.25@$16.50; Southern silvery, according to silicon, $15.50@$16; Southern coke, No. 1, $15.10@$15.60; No. 2, $14.60@$15.10; No. 3, $14.10@$14.60; Southern, No. 1, soft, $15.60; No. 2, soft, $14.60@$15.10.

Cleveland, O. Jan. 23.

(From Our Special Correspondent.)

Iron Ore.—Interest in this line is at low ebb. No time has been set for the meeting of the association to fix prices, no charters are being talked of for next year, and no movement of any moment is being seen from the lake yards to the furnace stock piles, so that in all iron ore matters here are dead.

Pig Iron.—This week the sales have been small, although the number of them has been satisfactory. The buyers seem to be needing but little new material, but have been applying heavily upon former orders, even to going in excess of their contract stipulations. This is not hampering the furnaces greatly, for they are in pretty fair shape to make deliveries. The prospects for the near future are better than the present trade. Prices remain unchanged. No. 1 foundry is quoted at $14, Valley furnace, and No. 2 foundry at $13.50. Basic is bringing $13.50 and off basic $12, although business is light. It seems impossible now to stop the strike that is to be called on February 1st at all of the furnaces in the Mahoning Valley. The difference in wages demanded by the men and offered by the furnacemen is too great to be settled at once.

Finished Material.—Steel rails seems to have been the leading feature of the market this week. Sales have amounted to 13,000 tons and the market has heard inquiries for 15,000 more tons yet to be heard from. It is expected that this amount will be covered soon. Most of these rails go to the electric lines, although a portion of them were purchased by some of the steam roads. Structural steel is still an important factor in the market. As many as five new buildings of large size are on the market, with two others talked of, and it is believed that orders for the steel will be placed in a short time. Two of these buildings have already been closed for.

There is also a prospective heavy sale in the announcement of the Nickel Plate Railroad of its intention to bui'd a number of new bridges in the near future. In all structural steel prospects are bright. The prices remain at 1.50 on beams and channels and 1.40 on angles, Pittsburg. The plate outlook is not so glomy since some of the steel mills have come upon the market making the announcement that deliveries are possible with them, in ten days or two weeks. It is said of them that they withheld their energy when contracts were being made, expecting prices to advance, and are now dependent upon the open market conditions to give them their business. Plates are still quoted at 1.40, Pittsburg. No change has been seen in billets, the market being very quiet. The quotation of the price remains at $19.75, although no sales have been made. Bars are strong at 1.35.

Old Iron.—The business picked up in old iron this week, some sales being made. These were sufficiently heavy to fix the prices upon a reasonable scale. The prices quoted are as follows: Heavy steel, $13.50; wrought turnings, $9; cast iron borings, $5.75; old car wheels, $17.50; cast scrap, $13; No. 1 wrought, $15.

Philadelphia. Jan. 24.

(From Our Special Correspondent.)

Pig Iron.—The large Carnegie transactions in Bessemer pig have caused a slight advance in quotations and led to the placing of orders for future delivery. Before the week is out the larger consumers will have covered their needs up to June, according to the views of agents of Bessemer. Basic also has felt the benefit, in that it has stimulated desire to provide against the possibility of large buying. As to forge iron, the expressions of several well-posted authorities confirm the views heretofore expressed, that the larger buying for forward delivery will strengthen prices. Pig iron people believe that a great deal of summer buying will soon be done. No change in the foundry iron situation. Outside price for No. 1 X is $16.50; No. 2, $16; forge, $15; basic, $15.

Billets.—The time to buy billets in a large way is coming near, but neither buyers nor sellers in Eastern markets have opened up. Large orders may be placed very soon, but $21 is not to be the price for Bessemer. There is more inquiry for open-hearth steel.

Merchant Bars.—The manufacturers of bar iron throughout eastern and middle Pennsylvania, so far as actually heard from, agree in opinion that the mid-winter weeks will bring a moderate accumulation of orders at slight shadings. They tacitly admit that some inducement will have to be held out despite the large amount of car building material that has been contracted for. That there is no evidence of accumulation is a good sign. Steel bars average 1.40; refined, 1.50.

Sheets.—There is no difficulty in selling sheet iron. No. 10 is quoted 2.25 and No. 28, 3.50. The users of sheets are ordering faster than stocks disappear.

Pipes and Tubes.—The industries which absorb these products are presenting constantly increasing requirements, a fact indicated by the projection of new tube plants. The current demand is only of moderate proportions, but office men say the prospective spring and summer requirements will check any weakening tendency On large orders it is understood prices are shaded.

Skelp.—So many new enterprises are on the way in which skelp enters that manufacturers feel themselves perfectly secure in selling their future output at full prices.

Plates.—New freight rates will make no difference with the average plate trade. But this does not apply to some of the large ship-building orders now under consideration and which a high authority here says may be placed sooner than may be expected. Quarter-inch, 1.60; flange, 1.70.

Structural Material.—As soon as ore freights and one or two other elements of uncertainty are definitely removed there will be a renewal of contracting for more remote deliveries, but buyers and those representing buyers say this does not mean there will not be concessions made. Angles are 1.65.

Rails.—The only expression that could be drawn out is that the steel rail mills will get all the business that is going to be done at $26. Representatives decline to say whether the drop of ore to $4 as against $5.50 will have any effect on steel rail prices. There is a good deal of business in sight for the next 30 days.

Old Rails.—Old iron rails, when they can be had, bring about $18.

Scrap.—There is quite an inquiry for selected scrap, but the supply is short. Choice railroad scrap will bring $18.50 and a further advance is probable. Heavy steel scrap brings from $15 to $16, and it is snapped up before it has a chance to reach the open market. No. 1 yard scrap is more easily had and we have some in stock. There is not much doing in other kinds.

Pittsburg. Jan. 23.

(From Our Special Correspondent.)

The feature of the iron and steel market this week was the heavy purchase of Bessemer pig iron by the Carnegie Company. This concern to-day concluded negotiations with the Bessemer Furnace Association for 150,000 tons. It is to be delivered within three months and the price is $12.50 at the Valley Furnaces. This is the largest single order of pig iron placed since the first half of last year. The large purchase is taken as an indication that an advance in prices is expected in the near future. This iron is to be consumed at the company's steel mills in this district. Although the Carnegie Company has seventeen furnaces in blast, with a capacity of 2,250,000 tons a year, the production is not sufficient to supply its needs owing to the heavy demand for finished steel. The company now has two new furnaces almost completed and two more that are being remodeled and the capacity increased from 300 to 700 tons a day. In addition to this order sales were made aggregating about 15,000 tons. The freight rate on pig iron from the Valley furnaces to Pittsburg has been reduced from 90c. to 75c., to take effect February 1st. A readjustment of ore prices is expected to be made some time this month and furnacemen look for a reduction from $5.50 to $4.50 or $4.25. This, however, wil not result in a cut in pig iron prices, furnacemen say, as the rates are now entirely too low. It is believed here that prices are more likely to be advanced. There is but little doing in foundry iron, but prices are firm. A number of 200 and 500-ton lots of foundry No. 2 were sold this week and 3,000 tons of gray forge were sold at Bessemer pig iron prices. Advices from Sharon and Sharpsville are to the effect that there is not likely to be a strike of furnace workers on February 1st. over the proposed reduction in wages to take effect on that date. It is expected that a compromise will be effected with the operators. The producers say that a strike now would be beneficial to them, as they could dispose of the stock of pig iron on hand, and it would have

the effect of stimulating prices. The workers realize this and are not anxious to close the furnaces. The steel market is firm and some sales of several thousand tons of Bessemer steel billets were made this week at the agreed price. It is believed here that at the next meeting of the steel interests in New York the price will be advanced $1 a ton at least. The steel mills are all busy on specifications received on contracts placed several months ago. There is a considerable amount of small business being placed on bars and plates. The demand for sheets continues, but there has been no change in prices. The National Steel Company will begin rolling rails at its Youngstown plant on Monday. The works have a daily capacity of 1,500 tons.

Pig Iron.—The sales of Bessemer pig iron were heavier than at any time within the past six months. In addition to the order for 150,000 tons placed by the Carnegie Company at $12.50, Valley furnaces, about 15,000 tons were sold at $13.25@$13.50, delivered at Pittsburg. About 3,000 tons of foundry No. 2 were sold this week at $14@$14.50. Gray forge is still quoted at Bessemer pig iron prices and about 3,000 tons were sold.

Steel.—The steel mills of this district are being operated to full capacity. About 3,000 tons of Bessemer steel billets were sold at $19.75, Pittsburg, the pool price. An advance of $1 or more is expected when the billet pool meets again. Tank plates are still quoted at 1.40c. and steel bars at 1.25c. A considerable amount of new business was received during the week.

Sheets.—There is but little new to report in sheets. The independent mills have all the business that can be handled for two or three months ahead. The American Sheet Steel Company, the combination, does not seem to be endeavoring to catch up with its orders, as a number of its plants are idle. No. 28 is still quoted at 2.95@3c. Galvanized sheets are in demand and are quoted at 75% off, with no allowance for freight.

Ferro-manganese.—The demand for 80% domestic is light this week. The leading producer continues to quote $62.50.

New York. Jan. 25.

The domestic market is generally quiet. In foreign trade we note continued heavy shipments of machine tools and manufactured iron and steel to England, $180,000 worth of locomotives, $38,000 worth of railroad material, $42,000 worth of finished iron and $28,000 worth of mining machinery to South Africa.

Pig Iron.—New orders are coming in slowly and are confined mostly to small lots. Prices are a little easier. We quote for Northern iron, tidewater delivery: No. 1 X foundry, $16.50@$17.25; No. 2 X, $15.50@$16; No. 2 plain, $14.75@$15.25; gray forge, $14.50@$14.75. For Southern irons on dock, New York, No. 1 foundry, $15.25@$15.75; No. 2, $14.50@$15; No. 3, $14.25@$14.50; No. 4, $13.50@$14; No. 1 soft, $15.25@$15.75; No. 2, $14.50@$15.

Bar Iron and Steel.—Demand has picked up but little. We continue to quote common bars at 1.35c. for large lots on dock; refined bars, 1.45c.; soft steel bars, 1.40c.

Plates.—Orders for the first half of the year are coming in fairly well, and some are of good size. We quote for large lots at tidewater: Tank, ¼-in. and heavier, 1.65c.; flange, 1.75c.; marine, 1.85c.; firebox, 1.85c.; universal, 1.60c.

Steel Rails and Rail Fastenings.—Inquiries continue to come in from abroad, but are mostly for delivery by March. Some good-sized domestic orders have been placed. Standard sections are still quoted at $26 at Eastern mills; light rails at $26@$30, according to weight. Spikes are 1.55c.; splice bars, 1.40c.; bolts, 2.10@2.25c.

Structural Materials.—Business is light. Prices are firm. We continue to quote at tidewater: Beams, 1.65c.; channels, 1.65c.; angles, 1.30c.; tees, 1.70c.; zees, 1.65c.

METAL MARKET.

New York. Jan. 25.

Gold and Silver.

Gold and Silver Exports and Imports
At all United States ports in December and year.

Metal.	December.		Year.	
	1899.	1900.	1899.	1900.
GOLD.				
Exports	$11,857,511	$410,533	$45,379,411	$54,134,623
Imports	5,620,246	3,375,552	51,334,964	66,738,025
Excess	I. $6,237,265	I. $2,965,019	I. $5,955,553	I. $12,603,402
SILVER.				
Exports	5,700,914	7,358,339	53,461,737	66,221,664
Imports	3,026,219	3,014,558	30,843,929	39,760,494
Excess	E. $2,674,695	E. $4,343,781	E. $22,617,808	E. $26,461,170

These figures include the exports and imports at all United States ports, and are furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York
For the week ending January 25th, 1901, and for years from January 1st, 1901, 1900, 1899 and 1898.

Period.	Gold. Exports.	Gold. Imports.	Silver. Exports.	Silver. Imports.	Total Excess, Exp. or Imp.
We'k	$4,068,304	$12,593	$988,242	$21,201	E. $5,022,752
1901..	5,753,916	216,982	2,560,385	242,634	E. 7,854,685
1900..	1,103,128	162,634	2,567,289	212,005	E. 3,295,778
1899..	198,221	1,934,073	2,190,692	286,070	E. 168,770
1898..	2,530,335	1 823,760	4,908,395	2,032,573	E. 3,582,397

Exports of gold were chiefly to Paris; of silver to London. Imports of gold were from the West Indies; those of silver from Mexico.

The United States Assay Office in New York reports the total receipts of silver at 96,000 oz. for the week. This makes a total of 225,000 oz. from January 1st.

Average Prices of Silver per oz. Troy.

Month.	1900. Lond'n Pence.	1900. N. Y. Cents.	1899. Lond'n Pence.	1899. N. Y. Cents.	1898. Lond'n Pence.	1898. N. Y. Cents.
January...	27.30	59.30	27.42	59.36	26.29	56.77
February..	27.49	59 76	27.44	59.42	25.89	56.07
March.....	27.59	59.81	27.48	59.64	25.47	54.90
April.....	27.41	59.59	27.65	60.10	25.95	56.02
May.....	27.56	59.96	28.15	61.23	26.31	56.98
June.....	27.81	60.42	27.77	60.43	27.09	58.61
July.....	28.23	61.25	27.71	60.26	27.32	59.06
August....	28.13	61.14	27.62	60.00	27 48	59.54
September	28.85	62.63	27.15	58.89	28.05	60.68
October ..	29.58	63.83	26.70	57.98	27.90	60.42
November	29.66	64.04	27.02	58.67	27.93	60.60
December.	29.68	64.14	27.21	58.99	27.45	59.42
Year....	28.17	61.41	27.44	59.58	26.76	58.20

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER. 1900.	COPPER. 1899.	TIN. 1900.	TIN. 1899.	LEAD. 1900.	LEAD. 1899.	SPELTER. 1900.	SPELTER. 1899.
Jan.....	15.58	14.26	27.07	22.48	4.68	4.18	4.65	5.34
Feb.....	15.78	17.02	30.58	24.20	4.675	4.49	4.64	6.28
March...	16.29	16.35	32.90	23.82	4.675	4.37	4.60	6.31
April....	16.76	17.13	30.90	24.98	4.675	4.31	4.71	6.67
May.....	16.34	17.20	29.37	25.76	4.181	4.44	4.53	6.88
June.....	15.75	16.89	30.50	25.85	3.901	4.43	4.29	5.98
July.....	15.97	17.10	33.10	29.63	4.030	4.52	4.28	5.82
August..	16.35	17.42	31.28	31.53	4.250	4.57	4.17	5.65
Sept.....	16.44	17.34	29.42	32.74	4.350	4.58	4.11	5.50
October..	16.37	16.94	28.54	31.99	4.350	4.575	4.15	5.32
Nov.....	16.40	16.49	28.25	28.51	4.350	4.575	4.29	4.64
Dec.....	16.31	15.85	26.94	25.88	4.350	4.64	4.25	4.66
Year.....	16.19	16.67	29.90	25.12	4.73	4.47	4.39	5.75

The prices given in the table for copper are the averages for electrolytic copper; this is the case for both 1899 and 1900. The average price for Lake copper for the year 1899 was 17.61c. For January, 1900, the average price of Lake copper was 16.33c.; for February, 16.08c.; for March, 16.55c.; for April, 16.94c.; for May, 16.55c.; for June, 16c.; for July, 16.16c.; for August, 16.58c.; for September, 16.69c.; for October, 16.64c.; for November, 16.80c.; for December, 16.88c.; for the year 1900, 16.52c.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ .48¼	$ .50½
Peruvian soles and Chilean pesos	.44½	.46½
Victoria sovereigns	4.85	4.88
Twenty francs	3.84	3.88
Twenty marks	4.73	4.78
Spanish 25 pesetas	4.78	4.82

Financial Notes of the Week.

General business conditions remain unchanged. The death of Queen Victoria had an unfavorable effect on the London markets, a little of which was reflected in the New York Exchange. Gold exports continue, $4,000,000 being reported taken this week for shipment abroad, chiefly to Paris. With $3,000,000 sent last week, this makes a total of $7,000,000 sent out on the present movement.

Silver has had a decided fall. This has been owing partially to sentimental reasons, to dearer money in London and to a cessation of Indian orders outside of Government orders. The latter have not been sufficient to sustain the market.

Indian exchange is firm, and Council bills sold in London at 16.03d. per rupee. A little gold has been sent from London to India, and a much larger amount has been taken in Australia for shipment to Calcutta or Bombay.

The statement of the United States Treasury on Wednesday, January 23d, shows balances in excess of outstanding certificates as below, compared with the corresponding day last week:

	Jan. 16.	Jan. 23.	Changes.
Gold	$82,095,360	$73,399,269	D. $8,696,091
Silver	13,646,190	16,594,032	I. 2,947,842
Legal tenders	12,999,753	12,525,593	D. 474,160
Treas. notes, etc.	151,046	137.700	D. 13,346
Totals	$108,892,349	$102,656,594	D. $6,235,755

Treasury deposits with national banks amounted to $97,414,192, showing a decrease of $939,706 as compared with the corresponding day last week.

Imports and Exports of Metals.

Port.	Week, Jan. 23. Expts.	Week, Jan. 23. Impts.	Year 1901. Expts.	Year 1901. Impts.
New York.				
(N. Y. Metal Exchange.)				
Aluminum.....long tons	.....	.....	3	.....
Antimony ore... " "	.....	.....	.....	.....
" regulus.. " "	.....	74	.....	90
Chrome ore..... " "	.....	.....	.....	.....
Copper, fine..... " "	1,383	200	5,060	635
" matte.. " "	.....	.....	195	22
" ore..... " "	.....	.....	.....	2,850
" ash..... " "	.....	.....	.....	.....
Iron ore..... " "	.....	.....	.....	.....
" pig, bar, rod " "	1,112	.....	2,674	20
" pipe..... " "	201	.....	1,129	.....
" plates, sheets " "	25	.....	132	.....
Lead..... " "	1,960	240	6,150	2,755
" ore.. ..... " "	.....	.....	.....	.....
" dross..... " "	.....	.....	.....	.....
Manganese, ore. " "	.....	985	.....	1,010
Metals, old, scrap " "	133	43	212	48
Composition... " "	160	.....	1,575	.....
Nails..... " "	114	.....	486	.....
Nickel ..... " "	46	12	128	12
" ore, matte " "	.....	.....	.....	.....
Railr'd material. " "	.....	75	1,610	155
Rails, old..... " "	.....	.....	.....	.....
Steel bars, plates " "	1,243	265	7,106	388
" rails..... " "	45	.. ..	3,954	.....
" wire..... " "	533	.....	2,779	.....
Tin ..... " "	.....	250	.....	907
" and black plates " "	.....	889	.....	2,551
" dross..... " "	.....	.....	.....	.....
Zinc..... " "	.....	.....	.....	50
" dross..... " "	15	.....	106	.....
" ashes, skim " "	26	.....	26	.....
" ore..... " "	.....	.....	.....	.....
Baltimore.				
(Special Correspondence).				
Antimony.....long tons	.....	.....	.....	.....
Chrome ore..... " "	.....	.....	.....	.....
Copper, fine ..... " "	516	.....	1,287	482
Ferro-manganese " "	.....	.....	.....	.....
Iron pig, bar, etc. " "	.....	107	126	1,386
" ore..... " "	.....	3,740	.....	20,829
" pyrites..... " "	.....	.....	.....	3,575
Manganese ore.. " "	.....	1,500	.....	3,250
Metals, old & Rails " "	.....	.....	.....	.....
Nails ..... " "	24	.....	76	.....
Pipe, iron & steel " "	232	.....	232	.....
Silicon ..... " "	.....	.....	.....	.....
Spiegeleisen..... " "	.....	.....	.....	.....
Steel, bars, etc.. " "	1,773	67	4,557	67
" wire ..... " "	.....	14	461	14
" rails..... " "	.....	.....	6,373	.....
Tin..... " "	.....	25	.....	25
" and black plates " "	.....	37	.....	37
Zinc..... " "	.....	.....	.....	.....
Philadelphia.				
(Week ending Jan. 19).				
Antimony ....long tons	.....	.....	.....	.....
Chrome ore..... " "	.....	.....	.....	.....
Copper, fine..... " "	.....	.....	.....	.....
" ore..... " "	.....	.....	.....	.....
" pyrites.. " "	.....	.....	.....	.....
Iron, pig..... " "	.....	138	.. ....	525
" ore..... " "	.....	.....	.....	13,990
" pyrites..... " "	.....	.....	.....	.....
Manganese ore.. " "	.....	.....	.....	.....
Spiegeleisen..... " "	.....	.....	.....	.....
Tin..... " "	.....	.....	.....	50
" and black plates " "	.....	.....	.....	2
Zinc..... " "	.....	.....	.....	.....
" ore..... " "	1,016	.....	2,016	.....

Total United States.

Articles.	Nov. 1900. Expts.	Nov. 1900. Impts.	Year, 1900. Expts.	Year, 1900. Impts.
Antimony.....long tons	.....	391	11	1,721
" ore.... " "	.....	163	.....	2,205
Copper, in all forms..... " "	9,508	10,205	148,341	72,160
Iron, pig & bar.. " "	32,700	3,800	267,624	66,312
" ore..... " "	4,537	65,654	51,383	338,262
Iron & steel plates " "	6,312	295	46,363	5,021
Iron & steel rails " "	15,496	289	346,235	1,280
" " wire " "	5,532	261	71,186	1,740
Lead, in all forms " "	8,323	9,146	81,951	90,917
Manganese ore and oxide..... " "	.....	603	3	250,047
Nickel "&matte " "	153	.....	2,414	.....
Nails, cut..... " "	903	.....	10,117	.....
" wire..... " "	1,436	.....	25,663	.....
Quicksilver..... " "	19	.....	318	.....
Steel, billets, rods, etc..... " "	37,298	2,324	173,258	31,267
Tin..... " "	31	1,589	472	28,005
" &black plates " "	59	2,087	601	55,886
Zinc..... " "	1,249	8	19,719	922
" ore ..... " "	3,197	.....	34,799	.....

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1¼c. a lb. on lead in ores; 2½c. per lb. on pigs, bars, etc.; 2¼c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. on pigs and bars, 2c. on sheets, etc. Copper, tin and platinum are free of duty.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending January 19th, gives the following totals, comparison being made with the corresponding week in 1900 and 1899:

	1899.	1900.	1901.
Loans and discounts	$720,351,600	$680,817,200	$836,873,400
Deposits	849,074,100	765,518,100	921,787,200
Circulation	15,439,300	16,294,600	30,973,200
Reserve:			
Specie	137,073,100	152,607,800	184,652,800
Legal tenders	69,889,100	62,957,400	73,050,600
Total reserve	$246,962,200	$215,565,200	$257,703,400
Legal requirements	212,268,525	191,379,525	230,446,800
Balance, surplus	$34,693,675	$24,185,675	$27,256,600

Changes for the week, this year, were increases of $22,841,000 in loans and discounts, $36,451,000 in deposits, $2,300 in circulation, $11,945,300 in specie, $2,476,000 in legal tenders and $4.858,550 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding date last year:

	1900.		1901.	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Ass'd	$152,607,800	.....	$184,652,800	.....
England	172,681 290	.....	155,846,655	.....
France	378,604,070	$228,520,480	467,625,145	$218,770,565
Germany	134,925,000	69,505,000	130,565,000	64,685,000
Spain	68,000,000	73,190,000	70,005,000	81,950,000
Neth'l'ds	19,450,000	29,800,000	25,090,000	27,985.000
Belgium	14,385,000	7,195,000	14.500.000	7,250,000
Italy	77,060,000	7,530,000	77 640,000	9,265,.00
Russia	428,650,000	27,575,000	309,315,000	32,020,000

The returns of the Associated Banks of New York are of date of January 19th, and the others are of date January 18th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

Imports of specie at San Francisco by water for the year 1900 included $24,868,516 gold and $3,001,269 silver; a total of $27,869,785, against $17,267,915 in 1899. The increase was chiefly in gold from Australia and Japan. The receipts were from the following sources: Mexico, $3,-245,842; British Columbia, $140,800; Central America, $55,483; Australia, $17,088,380; China, $7,845; Japan, $6,992,714; South America, $2,108; Hawaiian Islands, $359,140.

Receipts of specie from Mexico at San Francisco, principally by rail, are reported as follows for the year ending December 31st, as below:

	1899.	1900.
Silver dollars	$2,759,089	$ 8,600.838
Silver bullion	932,318	1,871.864
Gold bullion	803.108	266.244
Total	$4,494,515	$10,738,946

Commenting on this statement, the San Francisco "Bulletin" says: "The above statement evidently does not cover all the silver dollars received at San Francisco from Mexico for shipment to the Orient, as the exports of the same from San Francisco in 1899 were $3,661,026, and in 1900 the total sent away in the same direction was $10,011,234. The silver on hand at the end of the year was unusually light."

Shipments of specie from San Francisco by water for the year ending December 31st included $4,160,624 gold and $15,107,298 silver, a total of $19,267,922. In 1899 they were $12,224,941 gold and $12,800,495 silver, a total of $25,025,436. Of the silver shipments, $10,011,334 in 1900 and $3.661,028 in 1899, were in Mexican dollars. The destinations of these shipments were as follows:

	1899.	1900.
China	$7,753,963	$14,661,385
Japan	8,717	79,393
New Zealand	2,500	.....
Pacific Islands	5,137	7,359
Central America	14,600	21,625
Mexico	35,775	39,595
Total foreign	$7,820,692	$14,809,357
Honolulu	2,914,892	339,556
New York	9,584,852	4,120,015
Totals	$20,320,436	$19,268,928

The increase in exports to China was wholly in silver; the decrease in shipments to New York was in gold coin.

Shipments of silver from London to the East for the year up to January 10th, 1901, are reported by Messrs. Pixley & Abell's circular as follows:

	1900.	1901.	Changes.
India	£170,227	£215,500	I. £45,273
China	.....	.....	.....
The Straits	.....	.....	.....
Totals	£172,227	£215,500	I. £45,273

Arrivals for the week, this year, were £282,000 in bar silver from New York, and £6,000 from Chile; total, £288,000. Shipments were £164,000 in bar silver to Calcutta and £51,500 to Bombay; total, £215,500.

Other Metals.

Daily Prices of Metals in New York.

January.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London, Pence.	Copper. Lake, cts. ₩ lb.	Copper. Electrolytic ₩ lb.	Copper. London, £ ₩ ton.	Tin, cts. ₩ lb.	Lead, cts. ₩ lb.	Spelter. N. Y. cts. ₩ lb.	Spelter. St. L. cts. ₩ lb.
19	4.87¼	63	29 1/16	16¾	16¼	....	26½	4.32½ @4.37½	4.15	3.95
21	4.87¼	63 1/16	29 1/16	16¾	16¼	70⅝	26½	4.32½ @4.37½	4.12½	3.92½
22	4.87¼	62¾	28 15/16	16¾	16¼	71	26¾	4.32½ @4.37½	4.10	3.90
23	4.87¼	62	28⅝	16¾	16¼	..	26¾	4.32½ @4.37½	4.10	3.90
24	4.87¼	61⅞	28⅛	16¾	16¼	71⅛	26⅞	4.32½ @4.37½	4.10	3.90
25	4.87¼	62	28 1/16	16¾	16¼	71 1/16	26¾	4.31½ @4.37½	4.10	3.90

London quotations are per long ton (2,240 lbs.) standard copper, which is now the equivalent of the former g. m. b's. The New York quotations for electrolytic copper are for cakes, ingots or wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market is quiet but steady. More business is reported this week for home trade, but very little for export. Abroad the market is much depressed, and most descriptions are selling below our parity. Manufacturers, generally, are not well supplied and in well-informed quarters it is believed that the time is not far distant when larger purchases will have to be made in order to replenish depleted stocks. We quote Lake copper at 16¾c.; electrolytic in cakes, wirebars and ingots at 16¼c.; in cathodes at 16c.; casting copper at 16⅛c.

The market for standard copper in Lodon has fluctuated but little. It closed last week at £71 10s. for spot, £72 2s. 6d. for three months, and opened 12s. 6d. lower. On Tuesday it reacted 2s. 6d. and on Thursday it was £71 7s. 6d. for spot, £72 for three months. It closes at £71 8s. 9d. for spot and £72 1s. 3d. for three months.

Refined and manufactured sorts we quote: English tough, £75@£75 10s.; best selected, £78 5s.@£78 15s.; strong sheets, £85@£85 10s.; India sheets, £82@£82 10s.; yellow metal, 6⅞@7d.

Imports of copper into Great Britain for the years 1899 and 1900 are given by the Board of Trade returns as below, in long tons; the totals are reduced to equivalent terms of fine copper:

	1899.	1900.	Changes.
Copper ore	125,202	101,453	D. 23,749
Matte and precipitate	82,179	87,720	I. 5,541
Fine copper	59,550	71,086	I. 11,536
Totals, fine copper	113,160	125,091	I. 11,931

The United States last year furnished 1,262 tons ore (550 tons, 1899); 9,108 tons matte (5,-479 tons, 1899) and 28,218 tons fine copper, against 21,307 tons in 1899. The total equivalent fine copper in 1900 showed an increase of 10.6% over 1899.

Tin.—The market has been very quiet in spite of the advance in London. Sellers have raised their views, but buyers have not come forward to any extent. At the close we quote 26¾c. for spot and futures.

The London market, which closed last week at £120 5s. for spot, £119 for three months, opened at £121 5s. for spot, £119 12s. 6d. for three months, and quickly advanced to £122. On Tuesday it was £123 7s. 6d. for spot, £120 17s. 6d. for three months, and on Thursday reacted to £121 15s. for spot, £119 5s. for three months. It closes at £122 17s. 6d. for spot, and £119 10s. for three months.

Imports of tin into Great Britain for the year 1900 were: Straits, 25,423 long tons; Australasia, 3,061 tons; other countries, 4,634 tons; total, 33,-118 tons, against 27,174 tons in 1899. Re-exports were 19,753 tons, against 16,856 tons in 1899.

Lead.—The market is more active. Prices have not changed, and we quote 4.17½@4.32½c. St. Louis, 4.32½@4.37½c. New York.

The foreign market is again somewhat weaker, Spanish lead being quoted at £15 10s., with English lead 2s. 6d. higher.

Imports of lead into Great Britain for the year 1900 were as follows, in long tons, compared with those for the previous year:

From:	1899.	1900.	Changes.
Spain	99,422	87,873	D. 11,549
United States	32,669	40,724	I. 8,055
Australasia	54,678	53,832	D. 846
Other countries	11,608	12,951	I. 1,343
Totals	198,377	195,380	D. 2,997

The total decrease last year was 2,997 tons, or 1.5%. The lead credited to the United States was chiefly Mexican lead, refined here in bond.

Spelter.—The market has been more active and considerable business is reported, though at somewhat lower prices. We quote St. Louis 3.90c., New York, 4.10c.

The foreign market is also somewhat lower, good ordinaries being quoted at £18 10s., specials at £18 15s.

Imports of spelter, or metallic zinc, into Great Britain for the year 1900 were 69,536 long tons, against 69,919 tons in 1899; showing a decrease of 383 tons, or 0.5%, last year.

Antimony.—There is no change. We quote Cookson's at 10c.; Hallett's at 9½c.; U. S. Star, 9¼c.

Nickel.—The price continues firm at 50@60c. per lb., according to size and terms of order.

Platinum.—Consumption continues good and prices are strong. For ingot platinum in large quantities $18.20 per Troy oz. is quoted in New York. In London a recent quotation gives 75s. per ounce, unmanufactured, and 77s. 6d.@80s. for crucibles, etc. This is very nearly on a parity with New York prices.

Chemical ware (crucibles and dishes), best hammered metal from store in large quantities, is worth 72c. per gram.

Quicksilver.—The New York quotations continues unchanged at $51 per flask for large lots, with $52.50@$54 asked for small quantities. San Francisco prices are $48@$48.50 on local deliveries, and $43.50@$44 on export orders. The London price is £9 2s. 6d. per flask, with the same price named from second hands.

Imports of quicksilver into Great Britain for the year 1900 were 2,454,438 lbs. (3,877,184 lbs., 1899); re-exports were 1,940,241 lbs. (2,417,987 lbs., 1899). The excess of imports was 514,197 lbs. in 1900, against 1,459,197 lbs. in 1899.

Minor Metals and Alloys.—Wholesale prices, f. o. b. works, are as follows:

Aluminum.	Per lb.		Per lb.
No. 1, 99% ingots	33@37c.	Ferro-Titanium (20%)	$1.00
No. 2, 90% ingots	31@34c.	Ferro-tungsten (37%)	32c
Rolled sheets	42c. up	Magnesium	$2.75@$3
Alum.-bronze	20@23c.	Manganese (over 99%)	$1.05
Nickel-alum	33@39c.	Mangan'e Cop (20% Mn)	32c.
Bismuth	$2.25	Mangan's Cop (30% Mn)	38c.
Chromium (over 99%)	1.00	Molybdenum (Best)	$1.45
Copper red oxide	50c.	Phosphorus	50c.
Ferro-Molyb'um (50%)	$1.00	American	70c.
Ferro-Titanium (10%)	90c.	Tungsten (Best)	86c.

Variations in prices depend chiefly on the size of the order.

LATE NEWS

Advices from Vancouver, B. C., report that the Britannia Copper Mine, on Howe Sound, 25 miles from Vancouver, has been sold to Senator W. A. Clark, of Montana. The purchase price is reported to be $1,100,000.

An advance proof from the American Iron and Steel Association says that the total production of pig iron in 1900 was 13,789,242 gross tons, against 13,620,703 tons in 1899, 11,773,934 tons in 1898 and 9,652,680 tons in 1897. The production in the second half of 1899 and the first half of 1900 aggregated 14,974,105 tons, or almost 15,000,-000 tons. There was a decline in production in the second half of 1900, as compared with the first half, of 1,495,896 tons.

The production of Bessemer pig iron in 1900 was 7,943,452 tons, against 8,202,778 tons in 1899. The production of basic pig iron in 1900, all made with coke or mixed anthracite and coke, was 1,072,376 tons, against 985,033 tons in 1899. The production of spiegeleisen and ferro-manganese in 1900 was 255,977 tons, against 219,768 tons in 1899. The production of charcoal pig iron in 1900 was 339,874 tons, against 284,766 tons in 1899. The stocks which were unsold in the hands of manufacturers or their agents on December 31st, 1900, amounted to 442,370 tons, against 63,429 tons on December 31st, 1899.

(Special Report of Rogers, Brown & Co.)

Buffalo, N. Y., January 23d.—The general tone of the market is fairly active. Foundry iron is in good demand, both for early shipment and extended delivery. Lake Superior charcoal and coke malleable, however, have been sold here during the past week at special concessions regardless of the market or of competition; evidently with the simple idea of disposing of stock in one lump at the best price obtainable. We quote below on the cash basis, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $15; No. 2, $14.50; Southern soft, No. 1, $15.50; No. 2, $15.25; Lake Superior charcoal, $19; coke malleable, $14.50.

BY TELEGRAPH.

(From Our Special Correspondent.)

Rossland, B. C., January 24th.—The shipments of ore from the Le Roi Mine for the full year 1900 were 149,246 dry tons, the average value being $14.15 per ton. The average cost of mining was $3.25 per ton. This work was done with the old machinery, which is now in operation. The new 5-compartment shaft is now down to the 900-ft. level. The new machinery in connection with the shaft is nearly ready and will be started early in February. Its capacity is 1,000 tons daily hoisted, sampled and delivered into cars at the mine. The present capacity of the Northport Smelter is about 500 tons of ore daily; the additions increasing the capacity are not yet completed. The present management of the Le Roi Mine is locally considered to be careful and economical, and it is thought that the cost of mining will be reduced.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 134.)

New York. Jan. 25.

Heavy Chemicals.—Domestic makers of alkali and caustic soda are well sold up, holding to quotations, while second hands have sold at less. Sal Soda is in better request, and is more settled in price. Few new bleaching powder contracts are being booked, as the leading consumers have already placed their orders at $1.87½@$1.90 per 100 lbs. for Continental makes, and $2@$2.10 for prime Liverpool. Domestic chlorate of potash is firmer, owing to less speculation. A regular quarterly dividend of 1¾% on the preferred stock of Harrison Brothers & Company, of Philadelphia, is announced, payable February 1st.

We quote per 100 lbs. as follows: Domestic soda ash in bulk is worth 2¼c. per 100 lbs. less than quotations below:

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York.	In New York.
Alkali, 58%.	80@82½	.....	85@87½
" 48%.	82½@85	.....	.....
Caustic Soda, high test....	$1.80@$1.85	.....	1.85@1.87½
powd. 60%.	.....	2.75	.....
70@74%.	.....	2.85	.....
98%.	.....	3 25	3.75@4.00
Sal Soda	50	60	65
"conc.	1.12½@1.75	.....	1.75
Bicarb. Soda..	1.12½@1.25	.....	1.37½@1.75
" " extra	3.25@3.50	.....	.....
Bleach Pdr., Eng. prime..	.....	.....	2.00@2.10
other brands.	.....	.....	1.90@1.95
Chl. Pot cryst	.....	8.25@8.50	.....
" powd.	.....	8.50@8.75	.....

Cream of Tartar.—Increased competition between makers has forced the price down to 19½c. per pound for crystals and 20c. for powdered.

Acids.—More harmony exists among the acetic acid makers, and consumers are buying in a better way. Muriatic is in fair request, while stocks in makers' hands are light. Oxalic consumers are holding for lower prices, and are "feeling" the market at $5.50 per 100 lbs., while importers ask $5.62½ and up, according to size of order. Sulphuric shows a few more new yearly contracts at quotations. Blue vitriol is firmer.

Quotations as below are for large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

Acetic, No.8	$1.62½	Nitric, 36°	$3.87½
Blue Vitriol	5.00@5.25	Nitric, 38°	4.12½
Aqua Fortis, 36°	3 62½	Nitric, 40°	4.37
Aqua Fortis, 38°	3 87½	Nitric, 42°	4.75
Aqua Fortis, 40°	4.12½	Oxalic	5.62½@6.00
Aqua Fortis, 42°	4.50	Sulphuric, 66°	1.20
Muriatic, 18°.	1.20	Sulphuric, 60°	1.05
Muriatic, 20°.	1.35	" bulk 50° ton	14.00
Muriatic 22°	1.50		

Brimstone.—The market is stronger, as the syndicate is again in power, at least for another five years from July 1st next. Consequently, spot best unmixed seconds have sold at $22 @$22.50 per ton, while shipments are worth $21.50 @$21.62½, and best thirds $2 per ton less. A cable dispatch announces an advance of 6d. per ton in the Sicilian market.

Pyrites.—Though the domestic production has increased, the demand is still ahead, and sellers are firmer in their views. Inquiries from Canadian consumers have been in the market and producers are bidding on these orders. Importers of Spanish pyrites report a moderate business at easier prices, owing to freer tonnage. This week New York imported 3,456 tons pyrites from Spain. Freight rates from Huelva, Spain, to Atlantic ports are quoted lower at 9s. 6d.@ 10s., and it is likely that they will go still lower. We quote as follows: Mineral City, Va., lump ore (basis 45%), $4.90 per long ton, and fines $4.50. Charlemont, Mass., lump, $5.50 and fines $5. Spanish pyrites, 12s. delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46@51½% of sulphur; American from 42@44%.

Nitrate of Soda.—Importers report business very quiet, and prices unchanged at $1.85 per 100 lbs. for all positions. Reports from California state that extensive beds of nitrate of soda have been found in the Mojave Desert, in the vicinity of Death Valley. It is stated that Messrs. G. E. and W. C. Bailey, of San Francisco, have filed on nearly 30,000 acres for themselves and associates.

Messrs. Jackson Brothers, of Valparaiso, Chile, advise us, under date of December 15th, that the nitrate of soda has been in brisk demand and prices, especially for the refined quality, have advanced and sales of both grades amount to over 2,000,000 qtls. The scarcity of prompt 95%, aided by a further fall in freights, raised the price from 5s. 7½d. to 5s. 9d. alongside terms; at the same time a large business has taken place in forward deliveries of monthly parcels during 1901 at 5s. 8½d.@5s.9½d., steamer terms, 5s. 10½d. being paid for next October delivery, the market closing with buyers at the latter figures. The demand for 96% for the United States has been the feature of the situation, December to February deliveries being in greatest request, and owing to its scarcity holders have been able to obtain as high as 6s. 1d., steamer terms; some monthly parcels of April to September delivery obtaining 5s. 10½d. alongside. The production during November is advised at 2,921,000 qutls., making a total for the 11 months of 29,392,000 qtls., against 27,845,000 qtls. in 1899, or say an increase of 1,547,000 qtls. The exports for the 11 months amount to 26,-920,000 qtls., as against 26,891,500 qtls. during the same months of last year. The consumption of the world is advised for the same period at 28,-762,000 qtls., or say 117,000 qtls. less than up to like date of 1899. We quote 95%, January-March delivery, 5s. 8½d.; April-June, 5s. 9d.; July-December, 5s. 10d., and 96%, January-March, 6s. 1d.; April-July, 5s. 11d.; all ordinary terms buyers. The price of 5s. 8½d., with an all-round freight of 26s. 6d., stands in 7s. 8d. per cwt., net cost and freight, without purchasing commission.

Phosphates.—The market is weaker, as miners, particularly in Florida, have large stocks on hand. All sorts of prices are heard in the trade. Some c. i. f. United Kingdom orders for high-grade Florida rock for this and next year have been booked at 7⅝d. per unit ($11.90 per ton), which is somewhat less than has been quoted recently.

This week a charter of 1,393 tons was booked from Tampa to Adelaide, Australia, at about 30s. ($7.50).

Consular reports announce the discovery of large phosphate deposits in the desert, east of Kenah, Egypt, near the great caravan route leading to Kosseir, on the Red Sea, and in the Dahleh oasis in the Libyan desert. Samples analyze from 40 to 60% bone phosphate of lime. Owing to inadequate transportation facilities the deposits cannot yet be worked on a commercial scale.

Phosphates	Per Ton F. o. b.	C i. f Un'd Kingdom or European Ports.	
		Unit.	Long ton.
*Fla. hard rock (77@80%)	$6.50@7.00	7⅝@8d	$11.90@12.48
*Fla. land pebble (68@73%)	3 85@4.00	6⅛@7d	9 10@9.80
*Fla. Peace River (58@63%)	2.50@2.75	6@6½d	7.20@7.80
†Tenn. rock 78%, export.	2.85@2.90	7@7½d	10.92@11.12
†Tenn.....78% domestic.	2.70@2 85	.....	.....
†Tenn.....75% "	2.50@2.75	.....	.....
†Tenn.....72% "	2.25@2.50	.....	.....
‡So. Car. rock, crude....	3.75@4.00	.....	.....
§So. Car. rock, dried.....	4.50	6½d	7.80
Algerian, rock...(63@70%)	.....	7@7½d	9.24@9.51
Algerian, rock...(58@63%)	.....	6½d	7.80

* Fernandina. † Mt. Pleasant. ‡ At mines. § On vessels, Ashley River.

Liverpool. Jan. 9

(Special Report of Joseph P. Brunner & Co.)

Following are the exports of alkali and bleaching powder, as per Board of Trade returns just issued for month of December, 1900; also for the 12 months ending December 31st, 1900, and for comparison we also give the particulars for the corresponding periods of 1899, viz.: Alkali —Total exports to all quarters, including United States, for month ending December 31st, 1900, 225,151 cwts.; 1899, 347,769 cwts. Exports to United States alone, for 12 months, January to December, 1900, 38,004 cwts.; 1899, 102,153 cwts. Total exports to all quarters, including United States, 1900, 3,657,154 cwts.; 1899, 3,808,800 cwts. Exports to United States alone, 1900, 742,239 cwts.; 1899, 681,000 cwts. Bleaching powder—Total exports to all quarters, including United States, for month ending December 31st, 1900, 97,919 cwts.; 1899, 105,830 cwts. Exports to United States alone, 1900, 65,610 cwts.; 1899, 73,486 cwts.; Total exports to all quarters, including the United States, for 12 months January to December, 1900, 1,270,101 cwts.; 1899, 1,300,100 cwts. Exports to United States alone, 1900, 875,949 cwts.; 1899, 872,-100 cwts.

The shipments of alkali during December show a marked falling off as compared with 1899 and bleach has also decreased, although only to a very moderate extent, as compared with the alkali shipments. The total shipments of both alkali and bleach for the 12 months of 1900 compare unfavorably with the previous 12 months, although, taking foreign competition into account, the discrepancy is not so very marked. In spite of decreased quantities, the total value of alkali and bleach shipped during the past 12 months is considerably higher than for the previous 12 months.

Soda ash is very firm, and while export prices depend upon destination, the range for tierces may be called about as follows: Leblanc ash, 48%, £5 15s.@£6; 58%, £6 2s. 6d.@£6 7s. 6d. per ton net cash. Ammonia ash, 48%, £4 10s.@£4 15s.; 58%, £4 15s.@£5 per ton net cash. Bags, 5s. per ton under price for tierces. Soda crystals are steady at £3 7s. 6d.@£3 10s. per ton, less 5% for barrels, or 7s. less for bags, with special quotations for a few favored markets. Caustic soda is quiet, but quotations are well maintained as follows: 60%, £9 5s.; 70%, £10 5s.; 74%, £10 15s.; 76%, £11@£11 5s. per ton net cash.

Bleaching powder is 5s. dearer for softwood for home consumption, at £7 2s. 6d. per ton free on rails works. For export there is not much doing and quotations for hardwood range from £7@£7 5s. per ton net cash, as to market. The strike of the Buxton lime burners is restricting deliveries and causing some uneasiness to chemical manufacturers.

Chlorate of potash is still quoted at 3¾d. per lb. net cash, but there is nothing offering on this market available for shipment to America.

Bicarb. soda is selling to a moderate extent at £6 15s. per ton, less 5% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages; also special terms for certain favored markets.

Sulphate of ammonia is in better demand and prices have improved, £11 5s.@£11 7s. 6d. per ton, less 2½%, being now about nearest spot range for good gray, 24@25% in double bags f. o. b. here, as to quality.

Messina, Sicily. Jan. 1.

(Special Report of Emil Fog & Sons.)

Brimstone.—Another 5 years' agreement with the Anglo-Sicilian Sulphur Company is now certain. Only about 15% of the producers signed the new contract, while 50% are bound by the old contract. The Anglo-Sicilian Company will during 5 years dispose of 65% of the total production, and 35% remain free.

The market was firm in December. Export demand was slack at the advance prices. Only a few small offerings were made, but these were immediately bought by speculators.

It is of interest to note that stocks are reduced and exports larger than a year ago. Freight rates are lower, ballast lots to New York are quoted 7s. 3d. ($1.74).

We quote prices per long ton, f. o. b., as follows: Best unmixed seconds, 76s. 9d. ($18.42); best thirds, 68s. 9d. ($16.50); refined block sulphur (100%), 83s. 3d. ($19.98); refined roll, in casks, 90s. 3d. ($21.66); sublimed flowers(extra pure) in bags, 98s. ($23.52); superior quality, 95s. 6d. ($22.92), and current quality, 94s. ($22.56).

MINING STOCKS.

Complete quotations will be found on pages 130 and 131 of mining stocks listed and dealt in at:

Boston.	Salt Lake.	Montreal.
Colo. Springs.	San Francisco.	London.
Denver.	Spokane.	Mexico.
New York	St. Louis.	Paris.
Philadelphia.	Toronto.	

New York. Jan. 25.

There was some recovery in the copper share list, while the gold and silver stocks received the usual speculative support. Amalgamated Copper made a few large sales at the low level of $83¾ to $89¼, but later on inside buying the price rose to $92, a gain over the close of last week. Anaconda was not as much in demand as Amalgamated, even when insiders appeared on the market. Consequently Anaconda sold at less than last week. British Columbia manifested renewed interest, and strengthened from $7½ to $19⅞, the best prices obtaining near the close of the week. Union, of North Carolina, was pressed for sale on curb, dropping the prices to $4.50, while outside buying is comparatively small. Efforts were made on curb to create a market for the White Knob Copper Company, of New Mexico, and it is reported sales were booked at $13.50 for the $100 par value shares.

American Smelting and Refining shares were well maintained in value, owing to the announcement that at the coming special meeting next month the capitalization will be increased to $100,000,000, half in common stock and half in preferred, adding $35,000,000 to the present capital. The proposed increase is to be used in acquiring the plants of M. Guggenheim & Sons in this country and Mexico. Common shares of the American Smelting and Refining Company sold on 'change this week up to $64.75, and the preferred up to $99, most dealings being in the common stock.

Trading in Colorado stocks were moderate, as it is believed the coal strike which is affecting the southern part of the State and is already being felt in the Cripple Creek District will curtail the gold production. Portland weakened from $3.20 to $3.10, notwithstanding the 6c. quarterly dividend. Isabella, owing to the unsatisfactory report for the past year's operations, is soft, selling down 10c. to 65c. Anaconda is up 1c. at 44c., while Argentum-Juniata is down 1 point at 27c. Small Hopes went at 70c. and Gold Dollar at 25c.

Two lots of Ontario, of Utah, brought $7@$7.50, a gain of 50c. to $1 since last week. Horn Silver sold at $1.15.

Alice, of Montana, again sold at 48c. Brunswick, of California, was off 1 point at 27c.

The Comstocks are dormant. Of these sales Consolidated California & Virginia gained 5c. at $1.75.

Auction sales were 600 shares Interstate Oil Company, at $1@$1.50 per share; 7 shares Standard Oil Company, at $792 per share; 20 shares Joseph Ladue Gold Mining and Development Company, of Yukon, at $24 for lot.

Boston. Jan. 23.

(From Our Special Correspondent.)

The Boston market has been measurably quiet this week, so far as mining stocks are concerned. It has not, however, been weak, since prices have been fairly well maintained; and it has been a little broader, taking in some of the smaller coppers, for which a chance can be figured out for the future.

The continued large sales of Amalgamated and its lower price are exciting some comment, and there is some guessing as to the special kind of trap which is being set for the unwary. It is pretty sure that only the inexperienced or the heedless will be caught; most people have come to suspect any move in the stock and to look at it rather with curiosity than active interest.

Dominion Coal has improved, as has New England Gas and Coke. Both were strengthened by Mr. H. A. Whitney's sharp denial of the rumors that he was going to get out of the management.

Utah stocks seem to be taking a prominent place in Boston. Utah Consolidated and Centenial-Eureka are already favorites, and Daly-West, the stock which has just been listed, promises to be another. Now the stock of the Consolidated Mercur Gold Mines, Limited, is to be listed, as soon as the examinations required by the Exchange can be made.

The Quincy Mining Company makes its February dividend $3, against $4 in August and $5 a year ago. The Street generally had looked for a larger dividend, but the company is probably wise to charge up to earnings the $500,000 or so it has spent in construction during the past year. The Atlantic dividend of $2 for 1900 is the same as last year, and is about what was generally expected.

Salt Lake City. Jan. 19.

(From Our Special Correspondent.)

True to my prediction of last week, and in keeping with Capt. De La Mar's and Manager Cohen's style of management, the expected dividend on Consolidated Mercur was passed at the board meeting last Tuesday, and no excuse further than the claim that in order to list the stock in Boston there must be a heavy balance in the treasury.

The directors of the Northern Light met on Tuesday and levied an assessment of 2c. a share on the capital stock of the company, which becomes delinquent on February 19th. Since its organization, including the above-named assessment, it has called for exactly $104,000, or 26c. per share.

Daly-West came forward on Tuesday with its regular monthly dividend of 30c. per share, or $45,000.

Lower Mammoth has continued to jump up all week and the end is not yet. On Friday the management marketed its first shipment of silver ore from the new strike, and took down $59.24 per ton net, or $4,634 for the lot, consisting of 80 tons. Another lot, in which copper is said to predominate, will be marketed next week. Ajax has fluctuated all week, with an upward tendency, touching as high as $1.18, closing on Saturday at 94¼ bid and 94¾ asked.

As compared with the week ending January 12th, sales on the Mining Stock Exchange for this week have fallen off considerably, 180,029 shares being sold for $135,262.

San Francisco. Jan 19.

(From Our Special Correspondent.)

Prices have been fairly good and the market rather above the average, with a little bear turn toward the close. It was an ideal week for the fraternity of chippers, and they took advantage of it. As for the public, the speculative section of it is too busy at the Oil Exchange to notice mining stocks.

Some quotations noted are: Consolidated California & Virginia, $1.80; Ophir, 68c.; Silver Hill, 48c.; Gould & Curry, 45c.; Mexican, 34c.; Best & Belcher, 26c.; Hale & Norcross, 21c. There were some sales of Standard Consolidated at $4.50@ $4.60.

The monthly statements of the financial condition of the mining companies were filed in their offices in compliance with the law. The following companies report having had cash on hand January 1st, 1900, with all expenses paid to that date, unless otherwise stated: Andes, $3,-369; Alpha Consolidated, $893; Alta, $616, with bills payable of $500; Best & Belcher, $8,358; Bullion, $1,051; Caledonia (Gold Hill, Nev.), $13,-301, with December expenses at mine unpaid; Consolidated California & Virginia, $34,814 in coin and 8 railroad car-loads of ore, value unknown, on the way, and all expenses paid to date; Chollar, $2,625; Consolidated New York, $211; Crown Point, $569, with note of $1,000 at bank and December expenses at mine partly paid and an assessment being collected; Confidence, $1,050, with December expenses at mine unpaid and an assessment being collected; Challenge Consolidated, $2,295; Consolidated Imperial, $1,524, with an assessment being collected; Exchequer, $400; Hale & Norcross, $1,617; Julia Consolidated, $826; Justice, $646, with an assessment being collected; Mexican, $3,948; Ophir, $824, with December expenses nearly all paid and the returns from shipments of ore to be received; Overman, $4,326, with December expenses at the mine unpaid and an assessment being collected; Potosi, $209 and an assessment just levied; Savage, $8,410; Sierra Nevada, $7,-732; Segregated Belcher, $838; Silver Hill, $6,896; Syndicate, $2,984; Standard Consolidated, $180,-984, with December clean-up of bullion to be received and expenses for that month to be paid; Union Consolidated, $9,382; Utah Consolidated, $101.

The Belcher Mining Company reports having an indebtedness of $882 on January 1st, 1901, with mine expenses for December partly paid; Gould & Curry, unpaid bills amounting to $14,085, with $5,769 cash on hand, making a balance of indebtedness amounting to $8,316.

The business on the Oil Exchange has been active and prices strong. Hanford sold at $106; Oil City, $34; Kern River, $16; Kern Oil, $11; Peerless, $9.50; Los Angeles, $4.50; Home Oil, $4; Monte Cristo, $2.25. Along with the producing companies a great demand for prospects has been manifested.

London. Jan. 15.

(From Our Special Correspondent.)

The London & Globe collapse continues to monopolize the attention of the mining market. The shareholders have almost unanimously decided to reconstruct the corporation with an assessment of 5s. per share all round, and so to provide Mr. Whitaker Wright with funds to continue the policy of the corporation. It appears that the amount owing by the corporation to Stock Exchange creditors is nearly £1,-000,000 and it is possible that these creditors will be willing to take 10s. on the pound in full discharge of the debt. This means that practically £500,000 new capital will have to be subscribed by shareholders. As the capital of the corporation is £2,000,000 this will be effected by subscribing 5s. per share all round. In addition to this it will be necessary to provide further working capital and with this object in view it is proposed to dispose of the corporation's holdings in the Baker Street & Waterloo Electric Railway for £500,000 in cash. In this way the corporation will be set on its legs again and be rid of responsibility for the only solid industrial scheme that it has promoted. The whole of its capital will therefore be available for speculation on the Stock Exchange and for supporting its various speculative mining ventures. The wisdom of the shareholders in deciding to continue the policy of the corporation is open to question from a common sense point of view, just as is the wisdom of putting money on horse racing; but now that all shareholders are fully aware of the nature of the business undertaken by the London & Globe it is beside the mark to advise them to let such things alone. Before the collapse a great many shareholders imagined that their holdings were investments and not speculations, and that the business of the corporation was founded on solid industrial foundations, and under these circumstances it was necessary to warn unsuspecting shareholders of the real state of the case. The shareholders have now decided to subscribe 5s. a share all round in the hope that eventually they may find more credulous people than they are to relieve them of their holdings. Why this decision should be come to, seems rather surprising, for if the corporation went into liquidation the realization of the assets should bring shareholders 20s. on the pound, that is if Mr. Whitaker Wright's statement as to the value of the assets is true. The shareholders would then on the average get their money back and be quit of all further anxiety.

Paris. Jan. 13.

(From Our Special Correspondent.)

The mining stock market is slowly recovering from the depression which marked it at the opening of the year; but it can hardly be called an active one as yet.

The copper shares have remained strong, notwithstanding the apparent increase in stocks of the metal. This increase, I am told, does not indicate any fall in consumption, but only a change in the method of keeping account of the stocks. It must be remembered also that most of our manufacturers have been for some time buying only for their immediate needs, hoping that prices would decline. They have, as a rule, very small stocks in their hands, and must buy quickly unless business shows a decided decline—which has not been the case so far in the industries which use copper largely.

The zinc and lead shares generally are recovering from their recent decline, in sympathy with the prices of the metals. The outlook for these companies seems to be favorable upon the whole.

M. Maurice Block, whose death, at the age of 85 years, is announced this week, was a statistical writer of some note. He was for a long time attached to the Ministry of Commerce, and wrote for the "Journal des Economistes." His favorite field was the study of the statistics of France in comparison with those of other nations.

I have just received your admirable number of January 5th, and congratulate you on the result of your work. The showing is an extraordinary one, and cannot fail to impress our people.

Azote.

DIVIDENDS.

NAME OF COMPANY	Latest Dividend. Date.	Per share.	Total.	Total to date.
†Alaska-Mexican	Jan. 28	$0.10	$ 8,000	$519,031
†Alaska Treadwell	Jan. 28	.37½	75,000	4,595,000
†Amalgamated Copper	Jan. 28	1.50	1,125,000	9,000,000
Amalgamated, extra	Jan. 28	.50	375,000	.....
†Am. Steel Hoop, pf	Jan. 31	1 75	245,000	1,470,000
†Am. Tin Plate, com.	Feb. 1	2.00	560,000	560,000
†Am. Tin Plate, pf.	Jan. 31	1.75	320,688	.....
Atlantic Copper	Feb. 9	2.00	80,000	880,000
†Boston & Mont. Cop.	Feb. 20	5.00	750,000	22,475,000
Boston & Mont, extra.	Feb. 20	5.00	750,000	.....
†But'fly-Terrible, Colo	Jan. 28	.00½	6,250	6,250
Cambria Steel	Feb. 15	.50	160,000	1,760,000
*Central Lead, Mo.	Jan. 15	.50	5,000	212,000
†Central Oil, W. Va.	Feb. 1	.37½	22,500	45,000
Center Star, B. C.	Feb. 1	.01	35,000	105,000
Colo. Fuel & Iron, pf	Feb. 15	4.00	80,000	1,240,000
Consolidation Coal	Feb. 1	2 00	205,000	5,318,000
Continental Oil Cal.	April	.03	7,200	7,200
*Daly West, Utah	Feb. 15	.30	45,000	697,500
Doctor-Jack Pot, Colo	Jan. 28	.01	29 000	29,000
†Doe Run Lead, Mo.	Jan. 15	1.50	15,000	417,072
Federal Steel com	Feb. 20	5.00	2,324,215	4,067,377
†Flat Top C. L. Ass'n, pf	Feb. 1	1.00	37,141	1,987,127
†Flat T. C. L. Ass'n, com.	Feb. 1	1.00	37,141	315,699
*Golden Cycle, Colo	Jan. 18	.05	10,000	388,500
*Gwin, Cal.	Jan. 15	.15	15,000	166 500
†National Salt, com.	Feb. 1	1.50	105,000	350,000
†National Salt, pf.	Feb. 1	1.75	87,500	612,500
†Old Colony Zinc	Feb. 1	.25	17,477	85,753
†Parrot, Mont	Jan. 28	1.50	344,775	4,738,600
Quincy Copper	Feb. 25	3.00	300,000	12,270,000
San Joaquin Oil, Cal.	Jan. 20	.10	10,000	10,000
Shawmut Oil	Feb. 1	.50	25,000	25,000
*Silver King, Utah	Jan. 10	.50	75,000	3,525,000
†Tenn. C. I. & R.R., pf.	Feb. 1	2.00	4,960	248,000

*Monthly. †Quarterly. ‡Interim.

ASSESSMENTS.

NAME OF COMPANY.	Location	No	Delinq.	Sale	Amt.
Belcher	Nev.	67	Feb. 6	Feb. 27	.10
Ben Butler	Utah	7	Jan. 14	Feb. 5	.0 ½
Brunswick Con	Cal.	15	Dec. 26	Jan. 28	.03
Buckhorn	Utah	...	Jan. 14	.....	.01
Canton Placer	Cal.	1	Feb. 5	Feb. 25	.05
Caribou Oil	Cal.	...	Feb. 12	.....	.10
Centennial	Mich	...	Apr. 12	.....	2.00
Central Mammoth	Utah	1	Feb. 15	Mar. 5	.00¼
Confidence	Nev.	36	Jan. 30	Feb 21	.20
Ella Eldon	S. D.	..	Feb. 1	.....	.00¼
Emerald	Utah	..	Jan. 15	.....	.00½
Eureka Con. Drift	Cal.	28	Jan 15	Feb. 5	.00½
Excelsior	Utah	...	Feb. 14	Mar. 20	.00½
Galena	Utah	...	Jan. 15	.....	.05
Gold Hill	Utah	2	Feb. 13	Mar. 11	.01
Gonyon	Utah	.	Feb. 5	Feb. 25	.00¼
Gould & Curry	Nev.	93	Jan. 7	Jan. 28	.10
Justice	Nev.	70	Jan. 10	Jan. 31	.05
Lombard	Utah	...	Jan. 15	Feb. 1	.00½
Louise S.	Utah	.	Jan. 6	Feb. 5	.01
Mariposa Com'l & Mg	Cal.	20	Feb. 11	Mar. 2	10.00
May Day	Cal	5	Jan. 8	Feb. 19	.05
Meteor	Utah		Jan 31	Mar. 7	.00½
New Erie	Utah	4	Jan. 11	Jan. 28	.00¼
Northern Light	Utah	..	Feb. 19	.....	.02
Occidental Con	Nev.	36	Jan. 31	Feb. 21	.05
Orleans	Cal.	10	Jan 19	Feb. 16	.03
Potosi	Nev.	58	Feb. 19	Mar. 14	.10
Raymond	Utah	1	Feb. 12	Mar. 1	.05
Reward	Cal	..	Feb 13	....	.02½
R. G. W	Utah	...	Jan. 28	Feb. '6	.00½
Ruby Hill	Nev.	...	Jan. 28		.01
Silver Bow	Utah	..	Jan. 10	Jan. 30	.00¼
Silver King	Ariz.	22	Jan. 22	Feb. 19	.25
Skagit Cumberl'd Coal	W'sh	8	Jan. 7	Feb. 8	.01½
Snow Flake	Utah	18	Jan. 7	Jan. 28	.01
Susquehanna Con	Cal.	...	Feb. 11	.....	.02
Tanana	Cal.	2	Feb. 13	Mar. 6	.10
Tetro	Utah	17	Feb. 14	Mar. 11	.01
Trent	S. D.	5	Jan. 10	Jan. 31	.00½
Utah Con	Nev.	35	Feb. 1	Feb. 21	.05
West Argent	Utah	1	Jan. 23	Feb. 9	.02
Yuba River	Cal.	2	Feb. 9	Mar. 5	.03

ANNUAL MEETINGS.

Name of Co.	Locat'n.	Date.	Place of Meeting.
Alert	Colo	Feb. 5	Colorado Springs, Col
*Am. Sm. & Ref.		Feb. 16	Jersey City, N. J.
Am. Steel & W.	U. S.	Feb. 21	71 Broadway, N. Y.
Bingham C & G.	Utah	Jan. 30	Jersey City, N. J.
Cannelton Coal	W. Va.	Feb. 1	115 Broadway, N. Y.
Canton Placer	Cal.	Mar. 6	San Francisco, Cal.
Dalton	Utah	Jan. 23	Salt Lake City, Utah.
Daly	Utah	Feb. 15	Salt Lake City, Utah.
*El Rey	Utah	Feb. 4	Salt Lake City, Utah.
Eureka Hill	Utah	Feb. 19	Salt Lake City, Utah.
General Chem.	N. Y.	Jan. 30	32 Liberty St., N. Y.
*Jamison	Cal	Feb. 11	San Francisco, Cal.
Little Pittsburg	Utah	Feb. 8	Salt Lake City, Utah.
Mammoth	Utah	Feb. 1	Salt Lake City, Utah.
Maryland Coal	Md.	Feb. 5	1 Broadway, N. Y.
Meteor	Utah	Feb. 4	Salt Lake City, Utah.
Mont. Coal & Coke	Mont.	Jan. 30	Jersey City, N. J.
Moon Anchor	Colo.	Feb. 15	Colo. Springs, Colo.
National Lead		Feb. 21	Jersey City, N. J.
Omaha & Grant	Colo.	Jan. 29	Denver, Colo.
*Ophir	Nev.	Jan. 28	San Francisco, Cal.
Portland	Colo.	Feb. 4	Council Bluffs, Ia.
Rocco-H'm'stake	Nev.	Jan. 28	San Francisco, Cal.
*Sunbeam Con.	Utah	Feb. 1	Salt Lake City, Utah.
Trimountain	Mich	Feb 13	60 State St., Boston.
Uma Con	Utah	Feb. 6	Salt Lake City, Utah

*Special Meeting.

STOCK QUOTATIONS.

NEW YORK.

NAME OF COMPANY.	Location.	Par val.	Jan. 18. H.	Jan. 18. L.	Jan. 19. H.	Jan. 19. L.	Jan. 21. H.	Jan. 21. L.	Jan. 22. H.	Jan. 22. L.	Jan. 23. H.	Jan. 23. L.	Jan. 24. H.	Jan. 24. L.	Sales
Alamo	Colo.	1									.18				1,000
Alice	Mont.	25									.43				700
Amalgamated c.	Mont.	100	90.75	90.25	90.50	86.00	89.50	83.75	92.00	83.25	90.00	89.25	88.50		97,110
Anaconda, c.	Mont.	25	45.00	44.25	43.50	41.50	42.25	40.75	48.00	42.00	44.00	43.50	42.25		10,600
Anaconda Gold.	Colo.	5			.40		.44								1,000
Argentum-Jun.	Colo.	2							.27						500
British Col. Cop.	B. C.	5	19.00	18.75	18.25	18.00	18.00	17.63	19.00	18.63	20.00	19.63	20.00	19.75	3,000
Brunswick Cons.	Cal.	1	.28	.27					.28		.27				4,100
Chrysolite	Colo.	50									.10				500
Comstock T.	Nev.	100			.04½						.02				1,000
" " bonds	Nev.	100													
Con. Cal. & Va.	Nev.	2½			1.65		1.70		1.75						600
Creede & C. C.	Colo.	1									.10				2,000
Crescent	Colo.	10													
Cripple Cr. Con.	Colo.	1			.10										1,500
Crown Point	Nev.	8													
Deadwood	S. Dak	25													
Dunkin	Colo.	25	.15				.13								800
Gold Dollar	Colo.	1					.25								1,000
Horn Silver	Utah.	20			1.30		1.15								150
Iron Silver	Colo.	20													
Isabella	Colo.	1	.67								.65				800
Jack Pot	Colo.	1			.62										
Leadville	Colo.	10	.07				.07		.07		.07				2,300
Little Chief	Colo.	1									.17				100
Mexican	Nev.	3													
Mollie Gibson	Colo.	5	.22				.23								1,500
Moulton	Mont.	25													
Mt. Rosa	Colo.	1													
Ontario	Utah.	100	7.00		6.50				7.50	7.00					250
Portland	Colo.	1	3.25				3.20		3.10		3.15				700
Sierra Nevada	Nev.	3	.25												300
Small Hopes	Colo.	20							.70						100
Standard Con.	Cal.	10													
Syndicate	Cal.	1													
Tenn. Copper	Tenn.	25	18.00		18.00		18.00		18.00		17.25		17.50	16.50	
Union Copper	N. C.	10	4⅜	4¼	4¼	3⅞	4⅛	4⅛	4¼	4⅛	5	4¾	5⅛	4¼	2,000
Work	Colo.	1							.19						1,000
Yellow Jacket	Nev.	3									.14				200

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.		$100	32⅛	61	63	61	61⅛	60¼	63¼	62	64⅜	52¾	63		32,490
" " " pf		100	93½	98¾	98⅝	97½	93½	97	98¾	98	99	98¾	98		9,347
Am. S. & W. Con		100	40½	38⅝	42½	29¼	40	38	39¾	38	43¼	39⅝	39⅝		105,55
" " " pf'r'n		100	86¼	84	87	85½	86	83¾			85½	84½	25		10,700
Col. Fuel & I.	Colo.	100	45¾	43⅜	45¾	44⅜	44	42¾	44½	43½	46⅜	44⅜	44⅜		26,000
Col. & H. C. & I.	"	100	14½	14					16	15½					300
Federal Steel		100	48½	48¼	49	46½	46⅜	44¾	46¼	44	49¾	48¼	47¼		211100
" " pf.		100	69½	68⅜	70⅜	69¾	69	68	69	68¼	70½	69⅜	69¾		18,375
Fleming'n C. & C	W. Va.	100	23	20	23	20	23	20	23	20	23	20	23	19	
*Mong. R. Coal	Pa.	100	107½	104½			103¾	102½	103½	103½					1,200
" " " pf.	"	100	42¾	42½			42½		42¾	42½					95
National Lead		100	17	16½			16⅜				16¾	16⅜	16¾		1,200
" " pf.		100											86½		100
National Salt		100	45⅜	44	45	43⅝	44	43	45	43⅝	45	44	43¼		3,980
" " pf.		100	75		75		75¼	75	77	75½	79	78			1,755
*Pittsburg Coal	Pa.	100	27½	27			27⅜	27½	28	27⅜					3,292
" " pf.	"	100	86⅜	86⅜			86⅜	86⅜	86¾						445
Republic I. & S.		100	14	13¼	14	13⅜	13½	13	13⅝	12⅞	14	13⅜	14		5 610
" " pf.		100	56¼	55½	60	59	56½	55¼	56¾	56¼	57⅜	56⅞	57½		5,230
Sloss-Shef.		100									21½	21			200
" " pf.		100					67	66¼	66¾	65¼	66½				720
Stan. Oil		100	799	736	799	796	798	792	790	785	790	787	793	790	25
Tenn C., I. & R.R.		100	55	53¼	56½	55	55¾	53¾	56	54½	58	55¾	56⅞		26,375
Va. Coal & C.	Va.	100	4½	3½	4½	3¼	4½	3½	4½	3¼	4½	3½			

*On Pittsburg, Pa., Exchange. Total sales, 601,042.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par value.	Jan. 17	Jan. 18.	Jan. 19.	Jan. 21.	Jan. 22.	Jan. 23.
Belcher	Nev.	$3.00	.15	.12	.10	.10	.08	.08
Best & Belcher	"	3.00	.27	.22	.21	.23	.22	.23
Caledonia	"	3.00	.77	.70	.70	.70	.65	.65
Challenge Con	"	3.00	.21	.20	.18	.17	.16	.18
Chollar	"	3.00	.12	.11	.10	.12	.11	.10
Confidence	"	3.00	.60	.58	.50	.50	.60	.50
Con. California & Virginia	"	2.50	1.75	1.55	1.55	1.65	1.60	1.60
Crown Point	"	3.00	.14	.12	.12	.18	.10	.10
Gould & Curry	"	3.00	.45	.35	.37	.39	.40	.45
Hale & Norcross	"	3.00	.20	.16	.16	.17	.16	.16
Justice	"	2.00	.08	.08	.06	.07	.07	.07
Mexican	"	3.00	.34	.28	.24	.30	.24	.29
Occidental Con	"	3.00	.04	.04	.04	.04	.02	.02
Ophir	"	3.00	.63	.50	.61	.64	.61	.64
Potosi	"	3.00	.11	.09	.08	.09	.08	.13
Savage	"	2.50	.16	.16	.16	.19	.17	.20
Sierra Nevada	"	3.00	.22	.18	.21	.21	.20	.21
Standard Con	Cal.	10.00	4.25	4.25	4.55	4.50	4.25	4.00
Union Con	Nev.	2.50	.27	.23	.24	.26	.25	.27
Utah Con	"	1.00	.05	.05	.05	.05	.05	.05
Yellow Jacket	"	3.00	.17	.15	.14	.16	.15	.15

CALIFORNIA OIL STOCKS.*

Name of Company.	No. of shares.	Par Val.	Jan. 3. H.	Jan. 3. L.	Jan. 4. H.	Jan. 4. L.	Jan. 5. H.	Jan. 5. L.	Jan. 7. H.	Jan. 7. L.	Jan. 8. H.	Jan. 8. L.	Jan. 10. H.	Jan. 10. L.	Sales
Blue Goose	5,000	$100											2.50		
Buckhorn	20,000	10.00	4.00		4.00				4.00		3.25		3.75	3.25	
Cal. Standard	500,000	1.00	.83	.87	.85	.86			.87	.85	.37	.35	.39	.37	19,900
Caribou	100,000	1.00	.57	.53	.53	.50	.57	.55	.60	.55	.60	.58	.62	.50	4,546
El Dorado	100,000	1.00			2.25	1.75									
Four	300,000	1.00	.60	.85	.59	.58	.59	.53	.59	.53	.56	.59	.59	.57	3,400
Hanford	2,000	10.00	125		124		124	121	1.25	120	124	123	123	121	13
Hanf'd F. & K.	150,000	1.00	.39	.38	.42	.40	.48	.44	.48	.46	.48	.42	.48	.44	8 200
Home	100,000	1.00	4.25	4.15	4.15	4.10	4.05	3.95	4.00	3.75	3.95	3.85	4.00	3.90	3,060
Homestake	10,000	10.00											11.00		
Independence	600,000	1.00	.22	.21	.22	.20	.22	.20	.22		.22		.22	.21	1,800
Kern	100,000	1.00	11.00	10.25	11.00		10.75		11.00	10.50	11.00	10.75	11.00	10.50	1,739
Kern River	20,000	5.00	17.00	16.50	17.00	16.50	16.75	16.50	16.75	16.50			17.50	16.50	265
McKittrick	60,000	1.00	.36	.35	.40		.41	.30	.36		.27		.37	.36	1,267
Mo'arch of Ari	500,000	1.00	.75	.68	.71	.68	.68	.65	.69	.67	.69	.68	.74	.72	9,150
Monte Cristo	500,000	1.00	2.30	2.15	2.30	2.15	2.10	2.00	2.30	2.00	2.15	2.05	2.20	2.05	3,900
Oil City Petrol	5,000	10	38.00	36.50	37.50	36.00	36.50	35.00	36.00	35.50	36.00	35.00	34.00	33.00	85
Petrol. Center	500,000	1.00	.29	.27	.30	.27	.30	.27	.30	.28	.29	.27	.29	.26	40,205
Rex	100,000	5.00													
San Joaquin	100,000	1.00	13.75	13.00	13.50	13.00	13.13	12.75	13.00	12.50	13.00	12.75	13.00	12.13	1,535
Sterling	250,000	1.00	3.15	3.00	3.10	3.05			3.10	3.05	3.30	3.10	3.50	3.40	2,770
Sunset (Orig.)	100,000	5.00	.44	.42	.44	.40			.43	.40	.44		.41		100
Twenty-eight	60,000	10.00	2.45		2.48	2.45	2.48	2.40	2.40	2.35	2.40	2.35	2.35	2.30	1,500
Yukon	100,000	2.50	.45		.50				.55	.52	.65	.50	.60	.58	450

* Producers' Oil Exchange. San Francisco. Total sales 109,379 shares.

ST. LOUIS, MO.

NAME.	Location.	Share capital.	Par val.	Jan. 19. Bid.	Jan. 19. Ask.	NAME.	Location	Share capital.	Par val.	Jan. 19. Bid.	Jan. 19. Ask.
Am. Gold	Colo.	300,000	$10	$1.20	$1.30	Doe Run Lead	Mo	1,000	$100	$124.00	$132.00
Catherine Lead	Mo.	50,000	10	6.00	7.00	Granite Bimetallic	Mt	1000,000	10	2.80	3.00
Central Lead	Mo.	10,000	100	127.00	130.00	Kan. & Tex. Coal	Mo	25,000	100	70.00	85.00
Columbia Lead	Mo.	50,000	10	13.00	14.00	St. Joe Lead	Mo	800,000	10	14.00	15.00

BOSTON, MASS.†

NAME OF COMPANY.	Par val.	Shares issued.	Jan. 17. H.	Jan. 17. L.	Jan. 18. H.	Jan. 18. L.	Jan. 19. H.	Jan. 19. L.	Jan. 21. H.	Jan. 21. L.	Jan. 22. H.	Jan. 22. L.	Jan. 23. H.	Jan. 23. L.	Sales.
Adventure Con.	$25	100,000	10.00	9.75					9.88	9.50	9.50	9.25	9.25		840
Aetna Con.	5	100,000											.75		50
Allouez	25	80,000											2.75		300
Amal. Copper	100	750,000	91.00	90.50	91.00	90.25	90.25	86.25	89.50	84.50	88.50	88.38	90.00	89.00	17,654
Anaconda					45.50	45.13	48.00								30
Arcadian, c	25	150,000	18.00		18.00	17.50			18.00	17.50			17.75		355
Arnold	25	60,000							4.75	4.58	4.00				270
Ash Bed	25	40,000	.87½		.87½						.80				200
Atlantic, c	25	40,000	29.00		28.00				27.50	27.00	27.50	27.00	28.00	27.25	630
Baltic, c	25	100,000	33.50	33.00	35.00	33.25	33.50		33.50	33.00	35.00	33.00	34.50	34.00	2,498
Bingham, c. g.	10	190,000	16.00	15.50	16.00		16.00		16.00	15.50	15.50	15.38	15.63	16.00	15.88	2,61
Bonanza Dev.	10	300,000									1.13				50
Boston	10	100,000							5.50				5.38		150
Boston & Mont.	25	150,000	324	320	323	310	313	304	325	303	315	310	314		1,404
British Columbia	5	200,000							17.38						50
Butte & Bost., c	10	200,000	78.00		80.00	78.25	78.00	76.00	79.00	77.00	80.00	78.00	80.00	78.00	1,565
Cal. & Hecla, c	25	100,000			855	850	855	850	850		850		850		27
Catalpa	10	300,000			.20										400
Centennial, c	25	90,000	23.00	22.50	23.00	22.12	22.00		22.00	20.25	21.50	21.00	22.25	21.75	1,676
Cent'l-Eureka	25	100,000			24.00				24.00	23.75			25.00	24.50	955
Cochiti, g	10	175,000	10.00		10.00		10.00	9.50	10.00	9.50	10.00	9.75	10.50	10.13	1,413
Copper Range	25	100,000	39.00	38.00	38.00	36.63	37.50	36.75	37.00	36.50	37.75	36.50	38.00	37.00	2,720
Crescent	10	800,000	.10												600
Daly-West	20	150,000	30.00				30.25	29.75	30.13	30.00	30.00	29.88	30.25	30.00	1,000
Dominion Coal	100	150,000	36.75	36.50	37.25	36.00	36.50	35.50	36.00	35.50			36.00	35.38	2,002
do. pref.	100	30,000			113¼								109	109¾	90
Elm River	12	100,000	5.00	4.88	4.63	4.50			5.00	4.88	5.00	4.50	4.75	4.50	1,945
†Franklin, c	25	100,000	15.00	15.88	16.50	15.75	15.38	15.75	15.50	15.25	15.88	15.50	16.00	15.50	2,971
† " rights			.22	.15	.20	.15	.17	.16	.17	.13	.15	.10	.24	.10	20,088
Humboldt	25	40,000									.50				100
I. Royal Con., c.	25	100,000	36.00	34.50	35.00	34.00	35.25	33.63	34.00	32.50	34.13	34.00	35.50	35.00	2,908
Mass Con	25	100,000			13.50	12.75			13.50	12.50	12.88	12.50	12.75	12.50	1,100
Mayflower	25	100,000					2.00		2.00		2.00		2.00		510
Melones	10	187,577	1.13				1.25						1.13		700
Merced					5.00										150
Michigan	25	100,000	6.00	5.88							5.50				220
Mohawk, c	25	100,000	23.00	22.50	22.50	22.00	22.25	22.00	22.00		22.00		23.38	22.50	1,820
Mont. C. & C.	25	200,000											7.00		1,260
N. A. G. Dreg	10	100,000	.97½												50
N.E. Gas & Coke	100	160,000			12.00	10.00	12.00	11.63	11.50	11.50	12.00	11.25	12.00		2,215
Old Colony	25	100,000			3.50										30
Old Dominion, c	25	150,000	31.25		31.00	30.50	30.75	29.50	29.75	28.25	30.38	29.50	31.50	30.75	10,320
Osceola, c	25	98,000	83.50	82.25	82.00	81.00	81.00	80.25	80.00	78.00	79.75	79.50	82.00	79.38	1,927
†Parrot, s c	10	229,350	49.75	49.00	47.50	47.00	47.25	46.00	46.00	45.13	49.00	46.50	48.50	47.50	2,975
Quincy, c	25	100,000	179	176	175½	173	175		174	165	168	153	168	164	1,111
Rhode Island	25	100,000	4.50						4.50	4.25	4.60				170
Santa Fe, g. c.	10	250,000	6.75	6.50	6.25	6.00					6.00				905
Santa Ysabel	5	130,000									2.25				200
Tamarack, c	25	60,000	330	325	330		330	325	325½	325	330	328			48
Tecumseh	25	80,000					2.00		2.00	1.98					210
Trimountain	25	100,000	21.25		21.50	21.00	21.00	20.50	20.00		20.50	20.13	21.00	20.00	4,046
Union C. L.	25	80 000	3.00	2.75					2.75		2.50	2.38			710
UnitedStatesMg.	25	250,000	10.00		9.88				9.75	9.50	9.75	9.50	10.00	9.50	495
Utah Con., g. c.	5	900,000	33.00	32.50	33.00	32.50	32.50	32.00	32.00	31.40	33.00	31.75	34.00	33.50	2,309
Victor, g	5	200,000					.25								100
Victoria	25	100,000	4.00				3.93		3.88	3.75	3.88	3.75			880
Wtashington	25	60,000			.50				.50						400
Winona, c	25	100,000	5.75	5.00	5.25	5.00	5.13	5.00	5.00	4.75	5.00	4.50	4.50		1,550
Wolverine, c	25	60,000	49.00	48.50	48.50	48.00	48.00		48.25	47.50	48.50	48.00	49.00	48.00	1,353

† Official quotations Boston Stock Exchange. Total sales, 102,097 shares. †Ex-dividend.

PHILADELPHIA, PA.§

NAME OF COMPANY.	L'cation.	Par Val.	Jan. 17. H.	Jan. 17. L.	Jan. 18. H.	Jan. 18. L.	Jan. 19. H.	Jan. 19. L.	Jan. 21. H.	Jan. 21. L.	Jan. 22. H.	Jan. 22. L.	Jan. 23. H.	Jan. 23. L.	Sales
Am. Alkali		$50					2.13		2.13		2.13		2.13		550
Am. Cement		10					7.75		7.88		7.88		7.88	7.50	136
Bethlehem Iron	Pa.	50					59.00		59.25	59.00			59.63		925
Bethlehem Steel	"	50	17.50		17.50	17.00	17.50						17.00		542
Cambria Iron	"	50	45.50						45.75	45.50					557
Cambria Steel	"	50	17.50	16.63	17.25	16.38	17.25		17.00	16.38	17.25	17.13	17.63	17.38	15,955
Susq. I. & S.	"	10	2.38		2.38	2.25			2.25		2.25		2.25	2.13	948
United Gas I.	"	50	124	123¼	124	123¼	124	123	123¼	123¼	123¼	123¼	124		2,239

Total shares sold, 22,852. § Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia. † Ex-dividend.

SALT LAKE CITY, UTAH. Jan. 19.

STOCKS.	Shares.	Par val.	Bid.	Asked.	STOCKS.	Shares.	Par val.	Bid.	Asked.
Ajax	300,000	$10	$0.94½	$0.94¾	Horn Silver	400,000	$25	$1.05	
Albion				.70	Joe Bowers	400,000	1	.01	$.02
Alice	400,000	25	.37½		Lower Mammoth	150,000	1	4.21	4.30
Anchor			1.50	4.00	Mammoth	400,000	5	2.23	2.26
Bullion-Beck & Ch.	100,000	10	3.95	3.95	May Day	400,000	⅝	.40	.41½
Centennial Eureka	300,000	25	.23		Northern Light	400,000	5	.03¾	.04
Cons. Mercur	100,000	5	3.00	3.10	Ontario	150,000	100	7.00	8.00
Daisy	500,000	3	.00½	.00¾	Rocco-H'st'k-Nev.			.99	1 10
Dalton	500,000	5	.10¾	.15	Sacramento	1,000,000	5	.37½	.38¼
Dalton & Lark	2,500,000	1			Showers Cons.	400,000	5		.15
Daly	150,000	20	1.66	1.93	Silver King	150,000	20	69.00	72.00
Daly-West	150,000	20	29.65	29.97½	Silver Shield			.26½	.26⅝
Dexter	200,000	5	1.15	1.16½	Star Consolidated	500,000	1	.31	.32¾
Eagle & Blue Bell	250,000	1	.90	1.00	Sunbeam	250,000	1	.41	.41½
Four Aces	250,000	1	.01¾		Swansea	100,000	5	3.81	4.00
Galena	100,000	10	.03	.10	South Swansea	150,000	1	1.01	1.02½
Golden Eagle	250,000	1	.01¾	.03	Utah	100,000	1	.60	1.00
Grand Central	250,000	1	5.90	6.04	Valeo	300,000	10	.30	50
Homestake	400,000	1		.08	Yankee Consol'd	250,000	0.10	.09¾	.09½

TORONTO, ONT.

NAME OF COMPANY.	Par val.	Jan. 11. B.	Jan. 11. A.	Jan. 12. B.	Jan. 12. A.	Jan. 14. B.	Jan. 14. A.	Jan. 15. B.	Jan. 15. A.	Jan. 16. B.	Jan. 16. A.	Jan. 17. B.	Jan. 17. A.	Sales
Ontario:														
Golden Star	1	.01⅝	.02½	.02		.01⅞	.02¼			.01⅞	.02¼	.02⅛	.02½	8,000
Ham Reef	1							.01⅝		.01⅝				166
Olive	1													
British Col.:														
Cariboo M'k	1	.60								.60				
Crow's N. C.	25					62.50	67.00					35.00	68.00	10
Deer Trail	1	.02¼	.03			.02¼	.03			.02¼	.02¾	.02⅜	.02⅝	500
Eve Star	1	.05¾				.04½	.08			.05	.05	.05½	.07¾	2,000
Fairview	1	.03½		.03½	.03½	.03½	.03¾	.03¾		.01¾	.03½			97,675
Iron Mask	1	.30	.45			.30	.29			.34	.39	.35	.38	1,000
Jim Blaine	1													
Knob Hill	1	.49	.55			.38	.50			.40	.52	.35	.38	
Mont Cristo	1													
Mont & Lon	0.24													
Morrison	1	.04	.06			.05¼	.05¾	.06¼		.05¾	.06	.05	.06	17,000
Mount. Lion	1									.30	.50	.30	.50	
North Star	1	.89	.91			.85	.90½			.85	.90	.35	.90	
Payne	1	.50	.56			.45	.59			.50	.60	.55	.60	
Princess M	1													
Rambler	1	.25	.28			.25	.28	.27½		.25	.27½	.27¼	.28½	6,000
Republic	1	.55	.56½			.35	.59	.51½		.46	.51½	.50	.54	1,500
Van Anda	1	.02½	.02¾			.02	.02¼			.02	.02¾	.02	.02¼	7,000
Victory Tri.	1													
Virtue	1	.25½	.29			.23	.25			.24	.28	.24	.29	3,000
War Eagle	1	.50	.56			.59	.62½			.60	.69	.75	.85	1,500
Waterloo	0.10	.02½	.02¾							.02½	.02¾	.02½	.02¾	2,000
White Bear	1	.04¾	.04½	.04½		.04½	.05	.04½	.05	.05	.05¼	.05½		40,000
Winnipeg	1	.02½	.04			.02¾	.04			.02½	.04	.02¾	.04	
Develop Co.:														
B.C.G. Field	1					.02	.02¾			.03¼	.03¾	.03½	.03½	16 500
Can. G. F. S.	0.10	.07½				.07	.08			.07¼	.07½	.07¼	.07½	5 000

Total shares sold, 248,851.

STOCK QUOTATIONS.

COLORADO SPRINGS, COLO.‡

NAME OF COMPANY.	Par val.	Jan. 12. B.	Jan. 12. A.	Jan. 14. B.	Jan. 14. A.	Jan. 15. B.	Jan. 15. A.	Jan. 16. B.	Jan. 16. A.	Jan. 17. B.	Jan. 17. A.	Jan. 18. B.	Jan. 18. A.	Sales.
Acacia	$1	.28½	.24⅞	.28½	.23¾	.27¾	.28	.26½	.27	.22	.23½	.22¼	.23	67,500
Alamo	1	.11¾	.....	.11⅝	.12	.11⅝	.12	.11⅝	.12	.11⅝	.11⅝	.11¼	.12	10,000
Am. Con	1	.06¾	.07	.06¾	.07	.06⅝	.07	.06⅝	.07	.06⅞	.07	.06¾	.07	4,000
Anaconda	1	.41	.44	.42	.44	.41½	.45	.42	.44	.42	.....	.42	.43½	18,000
Anchor	1	.02½	.03	.02½	.02¾	.02⅝	.02⅞	.02⅝	.03	.....	.03	.....	.03	.....
Anchoria L	1	.60	.....	.60	.....	.80	1.00	.....	1.00	.60	.....	.....	.....	.....
Antelope	1	.02¼	.02⅝	.02½	.02¾	.02⅝	.02¾	.02¼	.02¾	.....	.02¾	.02⅝	.03	3,000
Aola	1	.05	.05¼	.04⅞	.05	.05	.....	.05	.05⅝	.04¾	.04⅞	.05	.05½	20,000
Arcadian	1	.04½	.04⅝	.04½	.....	.04½	.....	.04⅝	.06	.04½	.....	.04½	.....	.....
Arg'ntum J	1	.28	.30	.28	.30	.28	.30	.30	.30⅛	.29½	.30⅝	.....	.30	6,500
Banner	1	.....	.03¾	.03	.03½	.03	.03⅝	.03	.03⅝	.03	.03¾	.03	.03¼	6,000
Battle Mt.C	1	.24½	.25	.24½	.25¼	.24¾	.25	.25	.26	.24	.25	.20	.24⅜	21,000
Ben Hur	1	.07¾	.08	.07	.08¼	.07	.08¼	.06¾	.08	.08	.08¼	.08¼	.....	11,000
Black Bell	1	.11¼	.....	.11¼	.....	.11¾	.12⅜	.11¼	.13	.11¼	.....	.11¼	.....	.....
Blue Bell	1	.14¼	.14½	.14¼	.14½	.14¼	.14⅝	.14¾	.14½	.14½	.14½	.13¾	.14¼	11,000
Bob Lee	1	.05½	.05¾	.06	.06¼	.06½	.06¾	.06½	.06¾	.06½	.06¾	.06¾	.06¾	76,000
Buckhorn	1	.07	.07⅛	.06	.06⅜	.06¾	.06¾	.06½	.....	.06¼	.06¼	.05⅞	.06½	22,500
Cadillac	1	.02¼	.02½	.02½	.02½	.02⅛	.02¼	.02¼	.02½	.02¼	.02½	.02¼	.02½	.....
Central C'n	1	.06¾	.06¾	.06¾	.06¾	.06	.06⅜	.06	.06⅜	.06	.06¼	.06½	.06¼	31,000
Champion	1	.....	.....	.06¾	.07	.06¾	.06¾	.06¼	.06¾	.06⅜	.06⅝	.06⅜	.06⅜	3,000
Chicolo	1	.02⅝	.02⅞	.02½	.03	.02½	.02½	.02½	.02⅝	.02¼	.02⅝	.02⅝	.....	7,000
C. K. & N.	1	.02⅝	.03	.03⅛	.03¼	.03	.03⅛	.03	.03⅛	.02⅞	.03	.02⅝	.03	42,000
C. C.Col'bia	1	.11	.11⅛	.12	.12¼	.11¼	.12	.11	.12	.11	.11⅜	.11	.11¼	25,000
C. C. G. Ext	1	.14¼	.15	.14	.15	.13½	.....	.13¾	.14	.13¾	.....	.....	.....	4,000
C. C. & Man	1	.09⅜	.09⅝	.09¼	.03½	.09	.09¼	.09⅛	.09¼	.08½	.09½	.....	.09½	17,000
Copper Mt.	1	.04⅜	.04½	.04¼	.04⅜	.04	.04¾	.04	.04⅝	.04	.04¼	.03⅞	.04	3,000
Creede& CC	1	.10	.13	.10	.13	.10	.13	.10	.12½	.10	.11	.....	.13	1,000
C. C. Con	1	.11¼	12	.11	.12	.11⅝	.12	.11½	.11⅝	.11	.11¼	.10½	.11⅜	9,500
Dante	1	.09½	.09¼	.09	.09¼	.08½	.09	.09	.09⅛	.10	.10⅛	.09⅞	.10	.....
Des Moines	1	.05¼	.06	.....	.....	.06	.07	.03	.06¾	.05⅜	.....	.....	.06	115,500
Eclipse	1	.....	.08	.07¾	.08½	.07¾	.08¼	.08	.....	.08½	.08⅝	.08	.08½	4,000
Elkton Con	1	1.83½	.....	1.89	1.89¼	1.88½	1.89	1.87¼	1.88	1.84½	1.85	1.85	1.85¼	26,428
El Paso G	1	.49¾	.50	.....	.49	.45	.47	.46	.48	.46¼	.47	.....	.....	18,750
Enterprise	1	.....	.15	.....	.15	.18½	.....	.14⅞	.15	.....	.14⅞	.13	.15	.....
F. Rawlings	1	.....	.....	.....	.....	.....	.....	.15	.22½	.....	.22	.....	.22	.....
Findley	1	.....	.....	.12	.12⅜	.12	.13	.12	.13	.11	.13	.....	.13	3,000
Garf. Conn.	1	.07½	.....	.07½	.....	.07½	.....	.07½	.....	.07½	.....	.07½	.....	.....
Golden Fl	1	.29½	.30	.....	.30	.....	.30	.....	.30	.....	.30	.....	.30	1,000
Gold Hill	1	.02½	.03½	.03½	.03¾	.03½	.03¼	.03½	.03¼	.03½	.03¼	.03½	.03¼	12,000
Gold Sov'n	1	.07⅜	.08½	.08	.08¾	.07½	.07¾	.07¾	.08½	.07⅝	.07¾	.07⅝	.07¾	16,500
Hayden	1	.....	.02	.....	.02	.....	.02	.....	.02	.....	.02	.....	.02	.....
Humboldt	1	.03½	.03⅝	.03½	.03⅝	.03¼	.03⅝	.03¼	.03½	.03	.03½	.02⅞	.03½	24,000
Ida May	1	.24	.....	.23½	.....	.23½	.24½	.23½	.25	.23½	.25	.23	.24	2,000
Ing. Con	⅛	.21¾	.21⅝	.....	.22	.21	.22	.20⅝	.21⅝	.20¼	.20¼	.20	.21	4,000
Ironclad	1	.05½	.06	.05½	.05¾	.05½	.06	.05½	.06	.06	.06¼	.05⅜	.06	17,000
Isabella	1	.63½	.69	.69½	.70	.67¼	.68	.67	.67¼	.65	.67	.62½	.63	58,150
Jack Pot	1	.65½	.70	.....	.70	.65	.68	.60	.68	.50	.65	.52½	.55	7,500
Josephine	1	.01⅝	.02	.01¾	.02	.01⅝	.02	.01⅝	.02	.....	.02	.01¾	.02	3,000
Key West	1	.02¾	.03	.02⅜	.03¼	.02⅝	.03	.02½	.03	.02½	.02⅝	.02⅝	.02⅞	6,000
Lexington	1	.12¼	.....	.12¾	.12⅞	.12½	.12¾	.12¼	.....	.12¼	.12⅝	.12	.12¼	17,500
Magnet R.	1	.03⅝	.03⅞	.03¼	.03⅞	.03¾	.04⅛	.03⅝	.03¾	.03	.03⅞	.03¼	.03⅞	7,000
Margaret	1	.03⅜	.03⅞	.02⅜	.02⅝	.02⅜	.03	.02⅝	.03	.03	.03⅛	.02⅞	.....	66,500
Margery	1	.02⅜	.02½	.02⅜	.03	.....	.03	.02¼	.03	.02¼	.02⅝	.....	.02¾	1,000
Matoa	1	.....	.....	.....	.....	.....	.19	.....	.19	.....	.18	.....	.18	500
Midway	1	.04	.04¾	.04	.04¼	.04¼	.04½	.04¼	.04¼	.04	.04¼	.04	.04¾	4,000
M. J. T.	1	.04⅜	.04½	.04⅜	.04½	.04¼	.04⅝	.04¼	.04½	.....	.04¼	.04¼	.04½	21,000
Mobile	1	.03⅜	.03¾	.03⅜	.03⅝	.03⅜	.03⅝	.....	.03¾	.03½	.03⅝	.03⅝	.03⅞	18,000
Moll.Dwyer	1	.06¾	.06⅞	.06⅜	.06⅝	.06½	.06¾	.06⅜	.06¾	.06½	.06⅞	.06½	.06⅝	83,000
Mollie Gib.	1	.22	.....	.22½	.24	.20	.30	.....	.....	.....	.21	.24	.24	2,500
Monarch	1	.09	.09½	.04¾	.09½	.....	.09½	.....	.....	.03½	.09½	.03½	.09	6,000
Montreal	1	.....	.....	.04	.....	.04	.....	.04	.....	.04	.....	.04	.....	.....
Moon-A'c'r	1	.20	.28	.22	.30	.20	.30	.20	.....	.20	.....	.20	.30	.....
Morning S	1	.03¾	.04	.04	.04⅜	.04	.04¼	.04	.04⅛	.04	.04¼	.04¼	.04½	19,000
Mtn.Beauty	1	.08½	.08⅞	.05½	.03⅞	.08¾	.08½	.08½	.08¾	.08½	.08⅝	.08¾	.09	14,000
Mt. Rosa	1	.40	.....	.40	.50	.40	.50	.40	.50	.40	.45½	.40	.42	100
National	1	.09¾	.10	.09	.09¾	.09½	.10	.09½	.09¾	.09½	.09¾	.09½	.09⅝	15,000
Nellie V	1	.06¾	.07	.....	.07⅛	.06¾	.07	.06¾	.06⅞	.06⅜	.06⅞	.06½	.06⅝	8,000
New Haven	1	.07¾	.07⅞	.07½	.07⅝	.07⅜	.07¾	.07¾	.07¾	.07¼	.07⅝	.07⅜	.07¾	31,000
Olive B'nch	1	.04¼	.04¾	.04½	.04⅞	.04	.04⅞	.04½	.....	.04	.04⅝	.04	.04¼	5,000
Ophir	1	.34	.....	.33	.....	.35	.....	.35	.....	.40	.35	.36	.36	4,500
Oriole	1	.03¾	.04	.....	.04	.....	.....	.....	.04	.....	.03¾	.03¾	.....	4,000
Orphan	1	.15½	.20	.16	.....	.16	.....	.16	.16½	.16	.18	.16	.....	.....
Pelican	1	.02½	.02⅜	.02	.02¼	.....	.02	.01⅞	.02⅛	.02	.02¼	.02	.....	3,000
Pharmacist	1	.08¾	.08¾	.08	.08¾	.07½	.08	.07½	.08	.07⅜	.08¼	.....	.....	7,000
Pilgrim	1	.11	.11⅜	.11	.11½	.10½	.11	.10½	.10⅞	.10⅛	.11	.10⅝	.10⅞	55,000
Pinnacle	1	.....	.18	.15	.18	.....	.18	.15	.17½	.15¼	.....	.15	.18	.....
Portland	1	3.25	3.28	3.26	3.27	3.25	3.30	3.22	3.27	.....	.....	3.23	3.24	7,800
Prince Alb.	1	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾	.06¼	.06	.06¾	.06⅝	.05⅝	.05⅞	31,000
Princess	1	.05	.05¼	.05	.05⅜	.05	.05½	.05	.05⅜	.05	.05¼	.05	.05¼	2,000
Progress	1	.05¾	.06	.05¾	.....	.05½	.05¾	.05⅜	.05¾	.05⅜	.05¾	.05	.05⅝	8,000
Pythias	1	.04⅝	.04⅞	.04⅜	.04¾	.04½	.04¾	.04½	.04⅝	.04¼	.04½	.04¼	.04½	18,000
Republic	1	.07¾	.08¼	.07⅜	.07½	.07¾	.07¾	.07¾	.07¾	.07½	.07¾	.07¾	.07¾	38,000
Rob't Burns	1	.04¾	.05¼	.05	.05¼	.04¾	.05¼	.04⅝	.05	.04⅝	.04¾	.04¼	.04½	8,000
Rose Maud	1	.08	.08½	.08	.08¼	.08	.08¼	.07⅜	.08	.07½	.08⅛	.07¾	.07¾	17,000
Rose Nicol	1	.10½	.10⅜	.....	.....	.10	.13½	.10½	.10⅝	.10⅜	.10¾	.....	.10⅜	6,000
Silver Gold	1	.01⅜	.02	.....	.02	.01⅞	.02	.....	.01⅝	.02	.02⅛	.....	.....	2,500
Theresa	1	.07	.07½	.07	.07⅜	.07	.08	.07	.07¾	.07	.07¼	.07	.07¼	5,000
Trachyte	1	.06½	.06¾	.06⅝	.06¾	.06¾	.06⅞	.06½	.07	.06¾	.07	.06¾	.07	22,100
Uncle Sam	1	.04	.04¼	.04	.04¼	.04	.04½	.04	.04½	.....	.04¼	.03⅝	.04⅜	2,000
Union	1	.....	.12	.09	.12	.09	.12	.09	.12	.....	.12	.09	.12	.....
Va. M	1	.07	.....	.....	.....	.07	.....	.07	.....	.07	.....	.07	.....	.....
Vindicator	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.25	1.32	.....
Work	1	.20½	.21	.20¾	.21	.20½	.21	.20½	.21	.20⅝	.21	.20	.20¾	11,600
Zenobia	1	.10	.....	.10⅝	.....	.10¾	.....	.10¾	.....	.10¾	.....	.10¼	.10½	.....

Colorado Springs Mining Stock Exchange. Total sales, 1,275,228 shares.

MONTREAL, CANADA.*

NAME OF COMPANY.	Par val.	Week, Jan. 18. H.	L.	Sales.	NAME OF COMPANY.	Par val.	Week, Jan. 18. H.	L.	Sales.
Big Three	$1	.08	.02	.....	Montreal G. F	$1	.03	.02	.....
California	1	.05	.04	.....	Montreal-London	0.24	.05	.03	.....
Can. Gold Fields	0.10	.08	.07	.....	Okanogan	.....	.....	.....	.....
Decca	1	.04	.....	.....	Oregon	1	16½	.....	2,000
Deer Trail Con	1	.08	.02	.....	Payne	1	.58	.....	1,500
Evening Star	1	.07	.03	.....	Rambler-Cariboo	1	.52	.25	.....
Golden Star	1	.05	.....	.....	Republic Con	1	.51	.50	1,000
Gold Hills Dev	1	.03	.....	.....	Slocan-Sovereign	1	.08	.05	.....
Knob Hill	1	.50	.40	.....	Virtue	1	.28	.....	2,000
Monte Christo	1	.32	.....	.....	War Eagle	1	.76	.....	1,000

* Montreal Stock Exchange. Total sales, 7,500 shares.

MEXICO.

Jan. 11.

NAME OF COMPANY.	No. of shares.	Last div'd.	Prices. Op'g.	Cl'g.	NAME OF COMPANY.	No. of shares.	Last div'd	Prices. Op'g.	Cl'g.
Durango:					Hidalgo:				
Barradon y Cab	2,400	.....	$20	$15	Real del Monte	2,354	10.00	330	300
Candelaria de Pan.	1,200	.....	30	20	San Francisco Hc.	6,000	1.00	115	120
Capuzaya Guan.	2,400	.....	15	12	Soledad	960	5.00	270	230
Restauradora	10,000	.....	20	10	Sorpresa	960	7.50	210	200
Guanajuato:					Union Haciends	2,000	5.00	240	260
Angustias	2,400	5.00	90	85	Mexico:				
Cinco Senores y An.	2,000	15.00	245	220	Coronas	500	.....	75	75
Guadalupe Hacie'a.	10,000	3.00	200	210	Esperanza y An	3,000	10.00	950	980
Trinidad, aviadora	2,000	.....	6	7	Michoacan:				
do. aviada	400	.....	10	7	Luz de Borda ava.	4,000	.....	20	28
Zona Minera de Poz	2,400	.....	6	8	S. Luis Potosi:				
Hidalgo:					Concep. y An	2,400	.....	300	170
Amistad y Concord.	9,600	1.41	29	31	Zacatecas:				
Arevalo	720	.....	200	200	Asturiana y An	2,500	10.00	150	140
Bartolome de Med.	2,000	2.00	70	60	Caberon	2,400	.....	15	10
Carmen	1,100	7.75	150	130	C'delar de Pinos	2,500	.....	200	140
Luz Ca Maravillas	800	.....	100	80	Palma de Somb	2,400	.....	40	30
Pabellon	800	27.89	20	10					

DENVER, COLO.‡

NAME OF COMPANY.	Par val.	Jan. 14. B.	Jan. 14. A.	Jan. 15. B.	Jan. 15. A.	Jan. 16. B.	Jan. 16. A.	Jan. 17. B.	Jan. 17. A.	Jan. 18. B.	Jan. 18. A.	Jan. 19. B.	Jan. 19. A.	Sales
Acacia	1	.....	.....	.28¼	.28¾	.....	.27	.....	.....	.....	.....	.....	.....	3,000
Anaconda	5	.....	.....	.44½	.45	.....	.....	.....	.....	.....	.....	.....	.....	5,000
Arg. J	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dictator	1	.03¼	.03½	.03¼	.03⅝	.....	.....	.....	.03⅞	.03¼	.03¾	.03⅜	.03¼	12,000
Elkton	1	.....	.....	.....	.....	.....	.....	.....	.....	1.83¾	1.84½	.....	.....	.....
Gold. Sov'n.	1	.03¼	.....	.07⅝	.07¾	.07⅛	.07¾	.....	.....	.....	.07⅝	.07¼	.07¾	19,000
Ironclad	1	.05⅝	.06¾	.....	.....	.05⅝	.05⅞	.06	.....	.....	.07⅝	.....	.05¾	6,500
Key West	1	.....	.....	.....	.....	.02½	.....	.....	.....	.02⅝	.03	.....	.....	9,000
Magnet R'k	1	.....	.....	.....	.....	.03½	.03⅞	.03⅝	.04	.....	.....	.....	.....	2,000
Mt. Beauty.	1	.....	.....	.08⅜	.08⅝	.08⅜	.08⅝	.....	.....	.08⅛	.08⅜	.08⅜	.08⅜	7,000
National	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Haven.	1	.....	.....	.....	.....	.07⅝	.07¾	.....	.....	.....	.....	.....	.....	2,000
Pappoose	1	.....	.....	.07⅛	.07⅜	.07⅛	.07¼	.....	.....	.....	.....	.....	.....	8,000
Reno	1	.03⅛	.03¼	.03⅜	.....	.....	.....	.....	.....	.03	.03⅜	.....	.....	7,000
Republic	1	.07⅜	.08	.07⅛	.....	.....	.....	.....	.....	.07¼	.....	.....	.....	19,000

‡ Official Quotations Denver Stock Exchange. Total sales, 99,500 shares.

SPOKANE, WASH.

Week Jan. 17

NAME OF COMPANY.	Par val.	B.	A.	Sales.	NAME OF COMPANY.	Par val.	B.	A.	Sales.
Crystal		.04	.05½	1,000	Mountain Lion	$1	.31¾	.45	.....
Deer Trail Con	$1	.02	.02¼	6,500	Princess Maud	0.10	.02	.02¾	18,000
Evening Star	1	.04½	.07⅛	467	Quilp	1	.22½	.27	.....
Gold Ledge		.01¾	.02¾	49,250	Rambler Cariboo	0.25	.25¾	.29	7,500
Jim Blaine	1	.....	.....	.....	Reservation	.....	.04⅜	.05½	11,000
Lone Pine Surp. Con	1	.07⅝	.08¾	42,148	Sullivan	.....	.11¾	.12¾	7,000
Morning Glory	0.10	.07¼	.08½	59,500	Tom Thumb	.....	.14¾	.16	5,000

PARIS.

Jan. 3.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Opening.	Prices. Closing
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	85.00	1,760.00	1,785.00
" " Firminy	"	" "	3,000,000	500	175.00	3,225.00	3,300.00
" " Fives-Lille	"	" "	12,000,000	500	.....	472.50	472.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	3,550.00	3,550.00
" " la Marine	France	Steel mfrs	20,000,000	500	60.00	1,577.00	1,590.00
Anzin	"	Coal	.....	.....	260.00	6,250.00	6,275.00
Boleo	Lower Cal	Copper	.....	500	176.00	2,650.00	2,745.00
Briansk	Russia	Coal & iron	.....	500	.....	637.50	630.00
Champ d'Or	S. Africa	Gold	3,375,000	25	3.75	31.50	30.00
Courrieres	France	Coal	600,000	300	90.00	2,435.00	2,495.00
Dombrowa	Russia	"	.....	500	12.50	990.00	990.00
Dynamite Centraie	France	Explosives	.....	500	22.50	420.00	415.00
Escombrera-Bleyberg	Spain	Lead	.....	500	70.00	1,135.00	1,150.00
Fraser River	Brit. Col'mb.	Gold	250,000	25	.....	8.00	7.50
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	158.50	160.00
Laurium	Greece	Zinc & lead	16,900,000	500	30.00	498.00	500.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	985.00	1,025.00
Metaux, Cie. Fran. de	France	Metal d'lers	25,000,000	500	10.00	480.00	484.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	55.00	975.00	1,000.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	730.00	720.00
Napthe Nobel	"	"	.....	.....	.....	550.00	546.00
" " parts	"	"	.....	.....	.....	11,000.00	10,925.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	12.50	510.00	500.00
Penarroya	Spain	Coal, etc	.....	500	100.00	2,510.00	2,600.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	2.25	2.00
Salines de l'Est	France	Salt	.....	500	5.00	210.00	210.00
Salines du Midi	"	"	.....	500	25.00	867.00	855.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	36.00	655.00	682.50

LONDON

Jan 11.

NAME OF COMPANY.	Country.	Author-ized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
American:			£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska-Mexican, g	Alaska	£200,000	1 0 0	0 4.8	Nov. 1900	17 6	1 0 0
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	" "	5 1 3	5 3 9
Anaconda, c., s	Montana	6,000,000	5 0 0	8 2	Oct., "	9 12 6	9 15 0
De Lamar, g., s	Idaho	400,000	1 0 0	0 6	May, 1900	3 6	4 6
El Oro	Mexico	1,000,000	1 0 0	1 0	Aug., 1900	1 6 3	1 7 6
Enterprise, g	British Col'mbia	200,000	1 0 0	.....	.....	10 0	15 0
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Jan., 1900	7 6	10 0
Hall Mg. & Sm., c., s	British Col	250,000	1 0 0	.....	.....	3 0	4 0
Le Roi, g	" "	1,000,000	5 0 0	5 0	Nov., 1899	5 15 0	6 0
Le Roi No. 2, g	" "	120,000	5 0 0	.....	.....	5 10 0	6 10 0
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1900	7 6	12 6
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	3 0	3 6
Mountain Copper	California	1,250,000	5 0 0	9 0	Oct., 1900	4 15 0	5 0 0
Stratton's Independence	Colorado	1,100,000	1 0 0	6	Jan., 1901	1 1 3	1 3 9
Copiapo, c	Chile	200,000	2 0 0	3 4	Dec., 1900	3 0 0	3 5 0
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Oct., 1899	1 18 9	2 1 3
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	Dec., 1900	1 4 6	1 5 6
Utah Con., g. (Highl'nd Boy)	Utah	300,000	1 0 0	rts.	Mar., 1898	6 7 6	6 12 6
Velvet, g	British Col'mbia	100,000	1 0 0	.....	.....	17 6	1 0 0
Ymir, g	"	200,000	1 0 0	1 0	Nov., 1899	1 7 6	1 12 6
Rossland Great West, g	"	100,000	5 0 0	.....	.....	3 0 0	3 10 0
British Am. Corp	"	1,500,000	1 0 0	2 0	Mar., 1900	6 6	7 6
European:							
Linares, l	Spain	45,000	3 0 0	14 0	Oct., 1900	8 10 0	9 10 0
Mason & Barry, c., sul	Portugal	420,000	2 0 0	£1	" "	3 5 0	3 10 0
Rio Tinto, c	Spain	1,625,000	5 0 0	£2	" "	37 10 0	57 15 0
" " pref	"	1,625,000	5 0 0	2 6	" "	6 0 0	6 2 6
Tharsis, c	"	1,250,000	2 0 0	15 0	Apr., 1900	8 15 0	9 0 0
Australian:							
Assoc. Gold Mines	W. Australia	500,000	1 0 0	1 6	Jan., 1900	2 12 6	2 15 0
Broken Hill Prop., s	N. S. Wales	384,000	8 0	1 6	Nov., 1900	3 2 6	3 2 9
Great Boulder Prop	W. Australia	175,000	2 0	6	Feb., 1901	1 4	1 5 0
Hannan's Brownhill, g	"	140,000	1 0 0	7 6	Oct., 1900	4 1 3	4 6 8
Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	Nov., 1900	8 5 0	8 7 6
Kalgurlie, g	"	120,000	1 0 0	rts.	Oct., 1899	3 18 9	4 1 3
Lake View Consols, g	"	250,000	1 0 0	5 0	Aug., 1900	8 2 6	8 5 0
Mt. Lyell M. & R., l., c	Tasmania	900,000	3 0 0	2 0	Jan., 1900	6 0 0	6 5 0
Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	Dec., 1900	4 16 3	4 18 9
Waihi g	New Zealand	320,000	1 0 0	rts.	Jan., 1901	10 10 0	10 15 0
Indian:							
Champion Reef, g	Colar Fields	220,000	10 0	5 0	Jan., 1901	5 18 9	6 1 3
Mysore Gold, g	"	250,000	10 0	4 0	Nov., 1900	5 8 9	5 11 3
Nundyroog, g	"	242,000	1 0 0	2 0	" "	3 0 0	3 2 6
Ooregum, g	"	145,000	1 0 0	2 6	Dec., 1900	3 13 9	3 16 3
" pref. g	"	120,000	1 0 0	2 6	" "	4 17 6	5 0 0
African:							
British S. Africa, chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 1 3	3 3 9
Cape Copper, c	"	600,000	1 0 0	5 0	Jan., 1901	5 7 6	5 12 6
" " pref	"	150,000	2 0 0	5 0	" "	5 5 0	5 10 0
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	4 12 6	4 17 6
Con. Deep Level, g	"	200,000	1 0 0	x all	June, 1898	17 6	1 2 6
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1899	12 5 0	12 15 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Jan., 1901	29 0 0	29 5 0
Ferreira, g	Transvaal	90,000	1 0 0	90 0	Aug., 1899	18 10 0	19 10 0
Geldenhuis Deep, g	"	330,000	1 0 0	8 0	" "	8 10 0	9 0 0
Geldenhuis Est., g	"	200,000	1 0 0	10 0	" "	5 10 0	5 12 6
Henry Nourse, g	"	125,000	1 0 0	10 0	Apr., 1900	7 17 6	8 2 6
Jagersfontein, d	Orange Fr.

DIVIDENDS.

GOLD, SILVER, COPPER, ZINC, LEAD AND QUICKSILVER COMPANIES.

Number.	Name and Location of Company.		Author-ized Capital Stock.	Shares Issu'd No.	Par Val	Dividends. Paid, 1900.	Total to Date.	Latest. Date.		Amt.
1	Acacia, g.	Colo.	$1,500,000	1,500,000	$1	$45,000	$45,000	Dec.	1900	.01
2	Adams, s.l.c.	Colo.	1,500,000	150,000	10	7,500	701,000	Nov.	1900	.05
3	Ætna Con., q.	Cal.	500,000	100,000	5	30,000	225,000	April.	1900	.15
4	Alaska-Mexican, g.	Alask	1,000,000	180,000	5	72,000	501,031	Oct.	1900	.10
5	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	300,000	4,520,000	Oct.	1900	.37½
6	Amalgamated, c.	Mont.	75,000,000	750,000	100	6,000,000	7,500,000	Oct.	1900	2.00
7	Amanda, g.	Colo.	1,000,000	1,000,000	1	10,000	10,000	June.	1900	.01
8	Amazon, g.	Colo.	600,000	600,000	1	102,000	121,882	May.	1900	.10
9	Amer. Sm & Ref., pref.	U. S.	32,500,000	325,000	100	2,113,803	2,682,553	Oct.	1900	1.75
10	Am. Zinc, Lead & Sm.	Mo.	2,500,000	60,000	25	60,000	180,000	Jan.	1900	1.00
11	Anaconda, c.	Mont.	30,000,000	1,200,000	25	4,800,000	16,950,000	Oct.	1900	2.00
12	Apollo Con., g	Alask	1,000,000	100,000	10	70,000	210,000	Jan.	1900	.07
13	Argonaut, g.	Cal.	2,000,000	200,000	10	70,000	490,000	May.	1900	.05
14	Arizona, c.	Ariz.	3,190,550	.....	....	576,429	1,464,848	Sept.	1900	.84
15	Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	860,000	Feb.	1900	2.00
16	Bald Butte, g. s.	Mont.	250,000	250,000	1	82,500	852,148	Sept.	1900	.06
17	Boston-Aurora, pref.	Mo.	800,000	32,000	25	37,120	66,160	May.	1900	.50
18	Boston & Colo. Smelting	Colo.	750,000	15,000	50	45,000	315,000	Oct.	1900	.75
19	Boston Duenweg, z.	Mo.	1,000,000	40,000	10	24,000	56,900	June.	1900	.10
20	Boston Get There, z.	Mo.	250,000	22,500	10	9,000	20,250	April.	1900	.10
21	Boston Gold-Copper Sm.	Colo.	1,000,000	1,000,000	1	50,000	50,000	Nov.	1900	.02½
22	Boston-Little Circle, z.	Mo-K.	1,000,000	100,000	10	12,500	87,500	Mar.	1900	.12½
23	Boston&Mont.Con.,c.s.g	Mont.	3,750,000	150,000	25	6,450,000	20,975,000	Nov.	1900	15.00
24	Boston Phila., z. l.	Kas.	200,000	20,000	10	2,000	2,000	May.	1900	.10
25	Boston Providence, z., pf	Mo.	150,000	15,000	10	6,000	17,242	Aug.	1900	.05
26	Boston, q.	Cal.	1,000,000	100,000	10	10,000	20,000	Jan.	1900	.10
27	Boston Springfield, z.	Mo.	500,000	20,000	25	15,000	15,000	June.	1900	.25
28	Breece	Colo.	5,000,000	200,000	25	30,000	100,000	Dec.	1900	.05
29	Buffalo Hump, g. s. l.	Idaho	3,000,000	250,000	10	275,000	275,000	Dec.	1900	.10
30	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	60,000	2,498,400	June.	1900	.10
31	Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	231,000	1,032,000	Nov.	1900	.07
32	Butte & Boston Con., c.	Mont.	2,000,000	200,000	10	1,000,000	1,000,000	Dec.	1900	5.00
33	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	7,000,000	73,850,000	Dec.	1900	20.00
34	Cariboo-McKinney, g.	B.Col	1,250,000	1,250,000	1	86,500	478,087	Oct.	1900	.01½
35	Centen'l-Eureka, g.s.l.c.	Utah.	5,000,000	100,000	25	267,700	2,417,700	Oct.	1900	.50
36	Center Creek, l. z.	Mo.	1,000,000	100,000	10	30,000	40,000	Dec.	1900	.20
37	Central Lead, l.	Mo.	1,000,000	10,000	100	60,000	197,000	Nov.	1900	.50
38	Cloverdale, z.	Mo.	1,000,000	100,000	10	60,000	80,000	July.	1900	.20
39	Columbia, l.	Mo.	500,000	48,500	10	16,975	16,975	Nov.	1900	.05
40	Commonwealth, z., pref.	Mo.	500,000	100,000	5	30,000	50,000	June.	1900	.05
41	Consolidated Gold Mines	Colo.	1,000,000	1,000,000	1	100,000	110,000	Nov.	1900	.01
42	Con. Mercer Gold Mines.	Utah.	5,000,000	1,000,000	5	225,000	1,591,000	Nov.	1900	.11
43	Consolidated, z. l., pf.	Mo.	400,000	400,000	1	8,000	8,000	Jan.	1900	.20
44	Cordell, z. l.	Mo.	300,000	60,000	5	27,000	30,000	Sept.	1900	.05
45	Cripple Creek Con., g.	Colo.	2,000,000	2,000,000	1	160,000	160,000	Mar.	1900	.08
46	Cresus, g.	Cal.	1,000,000	200,000	5	91,800	139,300	Dec.	1900	.06
47	Daly West, g.	Utah.	3,000,000	150,000	20	450,000	570,000	Nov.	1900	.25
48	De Lamar, g. s.	Idaho	2,000,000	400,000	5	48,000	2,394,000	May.	1900	.12
49	Dixie, g.	Utah.	125,000	125,000	1	10,000	10,000	April.	1900	.02
50	Doe Run, l.	Mo.	1,500,000	10,000	100	50,000	402,073	Oct.	1900	.50
51	Ducktown, c. i. sul. (ord)	Tenn.	374,000	7,480	50	.....	95,744	Dec.	1899	9.60
52	Ducktown (founder).	Tenn.	1,000	200	5	.....	41,160	Dec.	1899	162.00
53	Elkton Con., g.	Colo.	3,000,000	2,500,000	1	258,750	979,461	Dec.	1900	.03
54	Empire State-Idaho.	Idaho	1,000,000	98,514	10	354,649	672,687	Dec.	1900	.30
55	Favorite, g.	Colo.	1,200,000	1,200,000	1	48,000	48,000	April.	1900	.04
56	Florence, s.	Mont.	2,500,000	440,000	5	22,000	252,000	April.	1900	.05
57	Frisco Con., l. s.	Idaho	2,500,000	500,000	5	.....	920,000	Nov.	1899	.25
58	Garfield Con., g.	Colo.	1,200,000	1,200,000	1	.....	34,000	May.	1899	.01
59	Gemini	Utah.	500,000	5,000	100	50,000	700,000	Aug.	1900	10.00
60	Gold Belt, g.	Colo.	1,250,000	1,250,000	1	112,500	112,500	Aug.	1900	.09
61	Gold Coin of Victor, g.	Colo.	1,000,000	1,000,000	1	220,000	580,000	Nov.	1900	.02
62	Gold Deposit, g.	Colo.	500,000	500,000	1	10,000	10,000	Mar.	1900	.02
63	Gold King, g.	Colo.	1,000,000	936,850	1	112,421	178,001	Oct.	1900	.03
64	Golden Cycle, g.	Colo.	1,000,000	200,000	5	110,000	368,500	Nov.	1900	.05
65	Golden Eagle, g.	Colo.	500,000	500,000	1	5,000	25,000	June.	1900	.01
66	Grand Central, g.	Utah.	250,000	250,000	1	25,000	691,250	Nov.	1900	.10
67	Grand Gulch	Ariz.	250,000	240,000	1	9,600	9,600	April.	1900	.01
68	Grass Valley Expl.	Cal.	100,000	30,000	2	37,500	67,500	May.	1900	.25
69	Greater Gold Belt, g.	Col.	5,000,000	3,800,000	1	76,000	76,000	June.	1900	.02
70	Gwin, g.	Cal.	1,000,000	100,000	10	45,000	126,500	Nov.	1900	.15
71	Hall Mg. & Sm.	B.Col	1,250,000	250,000	5	.....	120,000	May.	1899	.24
72	Hecla, l. s.	Idaho	250,000	1,000,000	¼	80,000	80,000	Oct.	1900	.02
73	Hecla Con., s. l.	Mont.	1,500,000	30,000	50	15,000	2,205,000	Oct.	1900	.05
74	Hidden Treasure, g.	Cal.	360,000	36,000	10	28,800	457,452	Sept.	1900	.10
75	Holy Terror, g.	S. D.	500,000	500,000	1	5,000	172,000	Jan.	1900	.01
76	Home, g.	Colo.	50,000	50,000	1	100,000	100,000	July.	1900	.50
77	Homestake, g.	S. D.	21,000,000	210,000	100	1,155,000	9,238,750	Nov.	1900	.50
78	Horn-Silver, g. s. c.z. l.	Utah.	10,000,000	400,000	25	20,000	5,279,000	June.	1900	.05
79	Idaho, g.	Idaho	1,000,000	1,000,000	1	8,188	8,188	April.	1900	.01
80	Idaho, s. l.	B.Col	500,000	500,000	1	.....	292,000	Jan.	1899	.05¾
81	Independence Con.	Colo.	2,500,000	2,500,000	1	100,000	100,000	Aug.	1900	.04
82	International, z.	Mo.	1,000,000	1,000,000	1	26,427	26,427	July.	1900	.01
83	Iowa, g. s. l.	Colo.	1,666,667	1,666,667	1	39,334	136,834	June.	1900	.00⅝
84	Iron Silver	Colo.	10,000,000	500,000	20	50,000	2,550,000	Dec.	1900	.10
85	Isabella, g.	Colo.	2,250,000	2,250,000	1	157,500	697,500	Sept.	1900	.01
86	Jack Pot, g.	Colo.	$1,250,000	1,250,000	$1	.....	$175,000	Dec.	1899	.06
87	Jamison, g.	Cal.	3,900,000	390,000	10	.....	50,700	April.	1899	.10
88	Klondike Bonanza, Ltd.	Klond	750,000	52,750	5	.....	12,000	Aug.	1899	.24
89	La Fortuna, g.	Ariz.	250,000	250,000	1	$252,500	895,000	Oct.	1900	.05
90	Lake City, g	Colo.	50,000	50,000	1	3,875	3,875	May.	1900	.01
91	Last Chance, s. l.	B.Col	500,000	500,000	1	.....	45,000	Apr.	1899	.05
92	Last Dollar, g.	Colo.	1,500,000	1,500,000	1	90,000	120,000	Nov.	1900	.02
93	Le Roi, g.	B.Col	5,000,000	200,000	5	.....	1,305,000	Nov.	1899	1.20
94	Lightner, g.	Cal.	125,000	105,000	1	5,250	5,250	Oct.	1900	.05
95	Lillie, g.	Colo.	1,250,000	250,000	5	45,117	349,183	April.	1900	.05
96	Little Tiger, g.	Cal.	500,000	500,000	1	15,000	47,500	Feb.	1900	.01½
97	Madison, g.	Colo.	1,250,000	1,050,000	1	35,000	35,000	June.	1900	.03½
98	Magnolia, g.	Colo.	1,250,000	1,100,000	1	187,000	187,000	July.	1900	.17
99	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	200,000	1,810,000	Nov.	1900	.05
100	Marion Con., g.	Colo.	5,000,000	500,000	10	.....	300,000	May.	1899	.01
101	Mary McKinney, g.	Colo.	1,000,000	1,000,000	1	150,000	180,000	Oct.	1900	.03
102	Midget, g.	Colo.	1,000,000	1,000,000	1	15,000	15,000	May.	1900	.15
103	Modoc, g. s.	Colo.	500,000	500,000	1	55,000	200,000	Nov.	1900	.01
104	Monarch, g.	Colo.	1,000,000	1,000,000	1	120,000	120,000	April.	1900	.12
105	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	.....	453,700	April.	1899	.12
106	Montana Ore Purchas'g.	Mont.	2,500,000	80,000	25	240,000	1,600,000	Sept.	1900	1.00
107	Morning Star Drift, g.	Cal.	240,000	2,400	100	7,200	854,490	Sept.	1900	3.00
108	Morse, g.	Colo.	1,250,000	1,250,000	1	.....	215,650	May.	1899	.12
109	Mountain, c.	Cal.	6,250,000	250,000	25	1,200,000	2,373,750	Oct.	1900	2.16
110	Mt. Diablo, s.	Nev.	5,000,000	50,000	100	5,271	260,271	Jan.	1900	.10
111	Mt. Rosa, g.	Colo.	1,000,000	1,000,000	1	.....	75,000	Dec.	1899	.04
112	Mt. Shasta, g.	Cal.	100,000	20,000	5	.....	6,000	May.	1899	.30
113	Moulton, g.	Mont.	2,000,000	400,000	5	.....	500,000	Oct.	1892	.05
114	Napa Con., q.	Cal.	700,000	100,000	7	60,000	1,200,000	Oct.	1900	.10
115	National Lead, com.	U. S.	15,000,000	149,054	100	149,054	1,341,486	Mar.	1900	1.00
116	National Lead, pf.	U. S.	15,000,000	149,040	100	1,043,280	10,579,280	Dec.	1900	1.75
117	New Idria, q.	Cal.	500,000	100,000	5	80,000	250,000	Oct.	1900	.20
118	N. J. & Mo., z.	Mo.	250,000	2,500	100	11,000	11,000	June.	1900	2.00
119	New York, z.	Kas.	700,000	28,000	25	.....	6,500	Oct.	1899	.25
120	N.Y.& Hon Rosario, s.g.	C. A.	1,500,000	150,000	10	255,000	1,415,000	Dec.	1900	.40
121	North Star Mines.	Cal.	5,000,000	250,000	10	.....	584,850	Nov.	1899	.20
122	Old Colony Zinc & Sm.	Mo.	1,100,000	69,909	10	68,276	68,276	Oct.	1900	.25
123	Omega, g.	Colo.	1,500,000	1,212,550	1	18,188	18,188	June.	1900	.01¼
124	Ontario, s. l.	Utah.	15,000,000	150,000	100	90,000	13,662,500	April.	1900	.30
125	Orphan Belle, g.	Colo.	1,000,000	1,000,000	1	.....	197,899	Dec.	1899	.09
126	Original Empire, g.	Cal.	5,000,000	50,000	100	.....	530,000	Oct.	1899	1.00
127	Osceola, c.	Mich.	2,500,000	93,000	25	558,000	3,638,500	Dec.	1900	3.00
128	Parrot, c.	Mont.	2,300,000	229,850	10	1,379,100	4,393,825	Oct.	1900	1.50
129	Pennsylvania Con., g.	Cal.	5,150,000	51,500	100	25,750	161,325	May.	1900	.10
130	Petro, g.	Utah.	1,000,000	200,000	5	.....	32,000	Oct.	1899	.02½
131	Pioneer, g.	Cal.	1,000,000	100,000	10	.....	62,500	Mar.	1899	.12½
132	Plumas Eureka, g.	Cal.	1,406,250	140,625	10	84,375	2,797,544	April.	1900	.60
133	Portland, g.	Colo.	3,000,000	3,000,000	1	750,000	3,307,080	Oct.	1900	.06
134	Queen Bess Propr., s. l.	B.Col	500,000	100,000	5	.....	25,000	July.	1899	.12½
135	Quicksilver, pref.	Cal.	4,300,000	43,000	100	21,500	1,866,911	July.	1900	.50
136	Quincy, c.	Mich.	2,500,000	100,000	25	900,000	11,970,000	Aug.	1900	4.00
137	Rambler—Cariboo, s. l.	B.Col	1,250,000	1,250,000	1	33,750	105,000	Mar.	1900	.01
138	Republic Con., g.	Wash	3,500,000	3,500,000	1	105,000	382,500	Mar.	1900	.01
139	Reward, g.	Cal.	1,000,000	100,000	10	.....	20,000	Aug.	1899	.20
140	Rocco-Homestake-Nev.	Nev.	300,000	300,000	1	9,000	9,000	Dec.	1900	.01½
141	Russell-Irwin, z.	Mo.	250,000	25,000	10	.....	15,000	Oct.	1899	.10
142	Sacramento, g.	Utah.	5,000,000	1,000,000	5	.....	138,000	Oct.	1899	.00½
143	St. Joseph, l.	Mo.	3,000,000	250,000	10	112,500	3,272,200	Sept.	1900	.15
144	Santa Rita, g.	Colo.	1,000,000	1,000,000	1	4,000	4,000	July.	1900	.02
145	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	825,000	3,275,000	Nov.	1900	.50
146	Silver Shield, g.	Utah.	300,000	300,000	1	1,500	1,500	Dec.	1900	.00¾
147	Small Hopes, s.	Colo.	5,000,000	250,000	20	.....	3,325,000	Feb.	1899	.10
148	Smuggler, s. l. z.	Colo.	1,000,000	1,000,000	1	330,000	1,700,000	Nov.	1900	.03
149	South Swansea, s. l.	Utah.	150,000	150,000	1	.....	165,000	Oct.	1899	.05
150	Southern Boy, g.	Colo.	1,250,000	875,000	1	17,500	17,500	May.	1900	.02
151	Squaw Mountain, g.	Colo.	2,000,000	2,000,000	1	.....	10,000	Nov.	1899	.00½
152	Standard Con., g. s.	Cal.	2,000,000	200,000	10	80,000	3,979,226	Nov.	1900	.10
153	Standard, s. l.	Idaho	500,000	500,000	1	295,000	2,100,000	Oct.	1900	.08
154	Stratton's Independ'ce.	Colo.	5,500,000	1,000,000	5	1,789,337	2,765,352	Oct.	1900	.48
155	Swansea, s. l.	Utah.	500,000	100,000	5	65,000	261,500	Nov.	1900	.05
156	Tamarack, c.	Mich.	1,500,000	60,000	25	1,020,000	7,290,000	Dec.	1900	10.00
157	Tomboy, g.	Colo.	1,500,000	300,000	5	144,000	956,000	Dec.	1900	.24
158	Touraine, g.	Colo.	1,250,000	1,250,000	1	87,500	87,500	April.	1900	.07
159	Union, g.	Colo.	1,250,000	1,250,000	1	312,500	395,244	Sept.	1900	.25
160	Union, z. l.	Kas.	500,000	500,000	1	15,000	15,000	Aug.	1900	.01
161	United, z. l., pref.	Mo.	6,000,000	14,938	25	27,598	30,263	Oct.	1900	.50
162	United Verde, c.	Ariz.	3,000,000	300,000	10	1,875,000	2,737,500	Nov.	1900	.75
163	Utah, g.	Utah.	1,000,000	100,000	10	2,000	181,000	Oct.	1900	.02
164	Vindicator Con., g.	Colo.	1,500,000	1,500,000	1	188,500	493,500	Oct.	1900	.02
165	War Eagle Con., g. s. c.	B.C.	2,000,000	1,750,000	1	52,500	545,250	Feb.	1900	.01½
166	What Cheer, z.	Mo.	225,000	22,500	10	9,000	11,250	May.	1900	.20½
167	Wolverine, c.	Mich.	1,500,000	60,000	25	240,000	510,000	Oct.	1900	2.00
168	Yellow Aster, g.	Cal.	1,000,000	100,000	10	140,000	449,416	Nov.	1900	.10
169	Ymir, g.	B.Col	1,000,000	125,000	5	.....	30,000	Nov.	1899	.24

COAL, IRON AND OTHER COMPANIES.

Number.	Name and Location of Company.		Author-ized Capital Stock.	Shares Issu'd No.	Par Val	Dividends. Paid, 1900.	Total to Date.	Latest. Date.		Amt.
1	Alabama Coal & Iron, pf	Ala.	$2,500,000	25,000	$100	$175,000	$218,750	Nov.	1900	1.75
2	Am. Agricul. Chem., pf.	U. S.	20,000,000	170,000	100	1,020,000	1,530,000	Oct.	1900	3.00
3	American Cement	Pa.	2,100,000	200,000	10	80,000	140,000	July.	1900	.40
4	American Coal	Md.	1,500,000	60,000	25	255,000	982,500	Sept.	1900	1.00
5	Am. Fuel Oil	Cal.	100,000	100,000	1	11,000	14,000	Nov.	1900	.01
6	Am. Steel Hoop, pf.	U. S.	14,000,000	140,000	100	980,000	1,225,000	Oct.	1900	1.75
7	Am. Steel & Wire, com.	U. S.	50,000,000	500,000	100	2,625,000	2,625,000	Oct.	1900	1.75
8	Am. Steel & Wire, pf.	U. S.	40,000,000	400,000	100	2,800,000	5,600,000	Oct.	1900	1.75
9	Arizona Western Oil	Cal.	100,000	100,000	1	1,000	1,000	Sept.	1900	.01
10	Bethlehem Steel	Pa.	15,000,000	300,000	50	600,000	900,000	Dec.	1900	.50
11	Buckhorn Oil	Cal.	200,000	16,000	10	3,800	3,800	Mar.	1900	.05
12	Burlington Oil	Cal.	60,000	60,000	1	3,000	3,000	Oct.	1900	.01
13	Cambria Steel	Pa.	16,000,000	320,000	50	940,000	1,600,000	Nov.	1900	.50
14	Colo. Fuel & Iron, pf.	Colo.	2,000,000	20,000	100	800,000	1,160,000	Dec.	1900	8.00
15	Consolidation Coal.	Md.	10,250,000	102,500	100	205,000	5,113,000	Feb.	1900	2.00
16	Diamond Star Oil.	Cal.	250,000	250,000	1	5,000	5,000	Nov.	1900	.02
17	Empire Steel & Iron, pf.	U. S.	5,000,000	23,700	100	71,100	142,200	July.	1900	1.50
18	Federal Steel, com.	U. S.	50,000,000	464,843	100	1,743,162	1,743,162	Mar.	1900	2.50
19	Federal Steel, pf.	U. S.	50,000,000	532,609	100	5,059,794	6,657,654	Oct.	1900	1.75
20	General Chem., com.	U. S.	12,500,000	70,703	100	282,812	411,814	Dec.	1900	1.00
21	General Chem., pf.	U. S.	12,500,000	81,264	100	365,688	519,959	Oct.	1900	1.50
22	Gray Eagle Oil	Cal.	250,000	100,000	2½	50,000	120,000	Nov.	1900	.50
23	Great Western Oil	Cal.	100,000	10,000	10	10,000	10,000	Oct.	1900	.10
24	Home Oil	Cal.	100,000	100,000	1	190,000	190,000	Nov.	1900	.10
25	Homestake Oil	Cal.	100,000	10,000	10	3,500	3,500	Nov.	1900	.25
26	Jefferson&Clearf.C'l,cm	Pa.	1,500,000	15,000	100	30,000	30,000	Aug.	1900	2.00
27	Jefferson&Clearf.C'l,pf.	Pa.	1,500,000	15,000	100	75,000	187,500	Aug.	1900	2.50
28	Kern Oil	Cal.	100,000	100,000	1	8,500	8,500	Nov.	1900	.50
29	Lehigh Coal & Nav.	Pa.	14,346,650	286,933	50	789,066	18,516,990	Oct.	1900	1.50
30	Maryland Coal, pf.	Md.	$1,895,005	18,850	$100	$94,250	$640,869	Dec.	1900	3.00
31	Monongahela R. Coal, pf	Pa.	10,000,000	200,000	50	350,000	350,000	July.	1900	1.75
32	Montana Coal & Coke.	Mont.	5,000,000	200,000	25	120,000	120,000	Oct.	1900	.30
33	National Salt, com.	U. S.	7,000,000	70,000	100	245,000	245,000	Dec.	1900	1.50
34	National Salt, pf.	U. S.	5,000,000	50,000	100	350,000	525,000	Nov.	1900	1.75
35	National Steel, pf.	U. S.	27,000,000	270,000	100	1,890,000	3,307,500	Dec.	1900	1.75
36	New Central Coal.	Md.	1,000,000	50,000	20	40,000	510,000	Nov.	1900	.40
37	Oceanic Oil.	Cal.	100,000	100,000	1	1,000	1,000	Sept.	1900	.01
38	Pacific Coast Borax.	Cal.	2,000,000	20,000	100	220,000	742,500	Nov.	1900	1.00
39	Park Crude Oil	Cal.	100,000	82,146	1	4,897	4,897	Sept.	1900	.01
40	Pennsylvania Coal.	Pa.	5,000,000	100,000	50	800,000	19,700,000	Nov.	1900	2.00
41	Pennsylvania Salt	Pa.	2,500,000	50,000	50	300,000	12,550,000	Oct.	1900	3.00
42	Pennsylvania Steel, pf.	Pa.	1,500,000	15,000	100	105,000	131,250	Oct.	1900	1.75
43	Pittsburg Coal., pf.	Pa.	32,000,000	320,000	100	2,240,000	2,240,000	Oct.	1900	1.75
44	Producers' & Con. Oil	Cal.	1,000,000	10,000	100	3,000	3,000	Oct.	1900	.30
45	Republic Iron & Steel, pf	U. S.	25,000,000	203,069	100	1,421,483	1,776,854	Oct.	1900	1.75
46	Rex Crude Oil	Cal.	500,000	85,000	5	21,250	21,250	Oct.	1900	.02
47	Sloss-Sheffield Ir.&St.,pf	U. S.	20,000,000	67,000	100	352,500	352,500	Oct.	1900	1.75
48	Standard Oil (of N. J.).	U. S.	100000,000	975,000	100	46,800,000	73,125,000	Sept.	1900	8.00
49	Susquehanna Ir. & Steel	Pa.	1,500,000	300,000	5	112,500	292,500	Oct.	1900	.07½
50	Tenn. Coal, I. &R.R.,com	Tenn.	23,000,000	225,536	100	902,144	1,553,216	Nov.	1900	2.00
51	Tenn. Coal, Ir. & R.R.,pf	Tenn.	248,000	2,480	100	143,840	243,040	Nov.	1900	2.00
52	Texas & Pacific Coal.	Tex.	2,000,000	20,000	100	120,000	1,800,000	Oct.	1900	1.50
53	United States Oil	W.Va	2,500,000	100,000	25	275,000	575,000	Oct.	1900	.50
54	Va.-Carolina Chem.,com	U. S.	12,000,000	90,000	100	360,000	720,000	Dec.	1900	1.00
55	Va.-Carolina Chem.,pf.	U. S	12,000,000	100,000	100	800,000	1,200,000	Oct.	1900	2.00
56	West Lake Oil	Cal	500,000	500,000	1	50,000	50,000	Sept.	1900	.01
57	Westmoreland Coal.	Pa.	5,000,000	250,000	50	150,000	.....	Oct.	1900	1.50
58	Yukon Oil	Cal.	2,500,000	100,000	2½	18,000	21,000	Oct.	1900	.02

This table is corrected up to December 8th. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT WHOLESALE PRICES.

	Cust.	Meas.	Price.
Abrasives—			
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF	lb.		$0.12
Minute No. 1	"		.15
No. 15	"		1.00
Corundum, N. C.	"		.07@.10
Chester, Mass.	"		.04½@.05
Crushed Steel, f. o. b. Pittsburg	"		.05½
Emery, Turkish flour, in kegs	"		.03
Grains, in kegs	"		.04½@.05
Naxos flour, in kegs	"		.03
Grains, in kegs	"		.05
Chester flour, in kegs.	"		.03
Grains, in kegs	"		.04½@.05
Peekskill flour, in kegs	"		.01¾
Grains, in kegs	"		.02½
Crude, ex-ship, N. Y.: Kuluk (Turkey)	lg. ton		22.00@24.00
Abbott (Turkey)	"		26.50@30.00
Naxos (Greek) h. gr.	"		32.00
Pumice Stone, Am. powd.	lb.		.01½@.02
Italian, powdered	"		.01½
Lump, per quality	"		.04@.40
Rottenstone, ground	"		.02½@.03
Lump, per quality	"		.05@.14
Rouge, per quality	"		.10@.30
Steel Emery, f.o.b. Pittsburg	"		.07
Acids—Acetic, 30% pure	100 lbs.		3.50
30% ch. pure	"		6.00
80% pure	"		7.50
Benzoic, English	oz.		.12
German	lb.		.45
Boracic, cryst.	"		.10½@.11
Powdered	"		.11@.11½
Carbolic, crude, 60%	gal.		.27
Cryst. 37% drums	lb.		.23
Liquid, 95%	gal.		.45
Carbonic, liquid gas	lb.		.12½
Chromic, crude	"		.20
Chem. pure	"		.50
Hydrochloric, ch. pure.	"		.07
Hydrofluoric, 36%	"		.08
48%	"		.05
Best	"		.25
Nitric, chem. pure	"		.09
Sulphuric, chem. pure	"		.07
Sulphurous, liquid anhy.	"		.08
Tartaric, cryst.	"		.29@.29½
Powder	"		.30@.30½
Alcohol—Grain	gal.		2.45
Refined wood, 95@97%	"		.75@.80
Purified	"		1.50
Alum—Lump	100 lbs.		1.75
Ground	"		1.85
Powdered	"		3.00
Chrome, com'l	"		2.75@3.00
Aluminum—Nitrate	lb.		1.50
Oxide, com'l, common	"		.06½
Best	"		.20
Pure	"		.80
Hydrated	100 lbs.		2.60
Sulphate, pure	"		1.50@1.75
Com'l	"		1.15@1.25
Ammonia—Aqua, 16°	lb.		.03
18°	"		.03¼
20°	"		.03¾
26°	"		.05½
Ammonium—			
Bromide, pure	"		.52@.53
Carbonate lump	"		.08½@.08¾
Powdered	"		.09½@.09¾
Muriate, gran.	"		.06
Lump	"		.09¼
Nitrate, white, pure (99%)	"		.10½
Phosphate, com'l	"		.12
Chem. pure	"		60
Antimony—			
Glass	"		.30@.40
Needle, lump	"		.05½@.06
Powdered, ordinary	"		.05¾
Best	"		.08½
Oxide, com'l white, 95%	"		.09½
Com'l white, 99%	"		.12
Com'l gray	"		.07
Sulphuret, com'l	"		.16
Arsenic—White	"		.04½@.04⅝
Red	"		.07¼@.07½
Asphaltum—			
Ventura, Cal.	sh ton		32.00
Cuban	lb.		.01½@.03½
Egyptian, crude	"		.05½@.06
Trinidad, refined	lg. ton		35.00
San Valentino (Italian).	"		15.00
Seyssel (French) mastic.	sh.ton		20.00
Gilsonite, Utah, ordinary	lb.		.03
Select	"		.03¾
Barium—Carbonate, Lump, 80@90%	sh. ton		25.00@27.50
92@98%	"		26.00@29.00
Powdered, 80@90%	lb.		.01¾@.02
Chloride, com'l	"		.02@.02¼
Chem. pure cryst	"		.05
Nitrate, powdered	"		.06
Oxide, com'l, hyd. cryst	"		.18
Hydrated, pure cryst.	"		.25
Pure, powd.	"		.27
Sulphate	"		.01
Barytes—Am. Cr., No. 1.	sh.ton		9.00
Crude, No. 2	"		8.00
Crude, No. 3	"		7.75
German, gray	"		14.50
Snow white	"		17.00
Bauxite—Ga. mines: 1st grade	lg. ton.		5.00
Second grade	"		4.25@4.50
Ala., f.o.b., 1st grade	"		5.00
Second grade	"		4.25@4.50
Bismuth—Subnitrate	lb		1.75
Subcarbonate	"		1.95
Bitumen, "B"	"		.03½
"A"	"		.05
"A" and "B"	"		.04½
Bone Ash	"		03¼@.03½

	Cust.	Meas.	Price.
Borax	lb.		$ .07¼@.07½
Calcined	"		.25
Bromine	"		.40
Cadmium—Metallic	"		1.40
Sulphate	100 lbs.		2.00@2.50
Calcium—Acetate, gray	"		1.55
" brown	"		1.05
Carbide, ton lots, f. o. b. Niagara Falls, N. Y.	sh. ton		80.00
Carbonate, ppt.	lb.		.05
Chloride, com'l	100 lbs.		.75
Best	"		.80
Sulphite	lb.		.05
Cement—			
Portland, Am., 400 lbs.	bbl.		1.50@2.00
Belgium	"		1.95@2.20
English	"		2.45@2.55
German	"		2.30@2.70
"Rosendale," 300 lbs.	"		1.05
Sand cement, 400 lbs.	"		1.55@1.95
Slag cement, imported.	"		1.65
Ceresine—			
Orange and Yellow	lb.		.12
White	"		.14
Chalk—Lump, bulk	sh. ton		2.60
Ppt. per quality	lb.		.03¾@.06
Chlorine—Liquid	"		.30
Water	"		.15
Chrome Ore— (50% ch.) ex-ship, N. Y.	lg. ton		26.00
Sand, f.o.b. Baltimore	"		33.00
Bricks, f.o.b., Pittsburg. M			175.00
Clay, China—Am. com., ex-dock, N. Y.	lg ton		8.00
Am. best, ex-dock, N. Y.	"		9.00
English, common	"		12 00
Best grade	"		17 00
Fire Clay, ordinary	sh. ton		4.25
Best	"		6.00
Slip Clay	"		7.00
Coal Tar Pitch	gal.		.08
Cobalt—Carbonate	lb.		1.75
Nitrate	"		1.50
Oxide—Black	"		2.20@2.30
Gray	"		2.22@2.40
Smalt, blue ordinary	"		.14
Best	"		.19
Copperas	100 lbs.		.45
Copper—Carbonate	lb.		.18
Chloride	"		.25
Nitrate, crystals	"		.35
Oxide, com'l	"		.19
Cream of Tartar—Crys.	"		.21@.21½
Powdered	"		.21¼@.21½
Cryolite	"		.06½
Explosives—			
Blasting powder, A. 25 lb. keg			2.50
Blasting powder, B.	"		1.25
"Rackarock," A	lb.		.25
"Rackarock," B.	"		.18
Judson R.R. powder	"		.10
Dynamite (20% nitro-glycerine)	"		.13
(30% nitro-glycerine)	"		.14
(40% nitro-glycerine)	"		.15
(50% nitro-glycerine)	"		.16½
(60% nitro-glycerine)	"		.18
(75% nitro-glycerine)	"		.21
Glycerine for nitro (32 2-10° Be.)	"		.13½@.13¾
Feldspar—Ground	sh. ton		8.00@9.00
Fluorspar—In bulk.			
Am. lump, 1st grade	"		12.40
2d grade	"		11.90
Gravel & crushed, 1st g	"		11.40
2d grade	"		10.90
Ground, 1st grade	"		15.90
Foreign, lump	"		8.00@12.00
Ground	"		11.50@14.00
Fuller's Earth—Lump.	100 lbs.		.75
Powdered	"		.85
Refined lump	"		1.25
Graphite—Am. f. o. b. Providence, R.I. lump	sh. ton		8.00
Pulverized	"		30.00
German, lump	lb.		.01¼
Pulverized	"		.01½@.02
Ceylon, common	"		.03½
Pulverized	"		.04@.08
Italian, pulv	"		.01¼
Gypsum—Ground	sh. ton		8.00@8.50
Fertilizer	"		7.00
Rock	lg. ton		4.00
English and French	"		14.00@16.00
Infusorial Earth—Ground, American, best	"		20.00
French	"		37.50
German	"		40.00
Iodine—Crude	100 lbs.		2.45
Iron—Muriate	lb.		.05
Nitrate, com'l	"		.01¼
True	"		.03½
Oxide, pure copperas col	"		.05@.10
Purple-brown	"		.02
Venetian red	"		.01@.01½
Scale	"		.01@.03
Kaolin—(See Clay, China).			
Kryolith—(See Cryolite.)			
Lead—Acetate, white	lb.		.07
Com'l, broken	"		.06½
Brown	"		.05½
Nitrate, com'l	"		.06½
" gran.	"		.8½
Lime—Com., ab. 250 lbs	bbl.		.70
Finishing	"		.80
Magnesite—Greece. Crude (95%)	lg. ton		6.50@7.00
Calcined	sh.ton		14.00@15.00
Bricks	M.		170.00
Am. Bricks, f o.b. Pittsburg	"		175.00
Magnesium—			
Carbonate, light, fine pd	lb.		.03¾
Blocks	"		.06@.09
Chloride, com'l	"		.01¾
Fused	"		.30

	Cust.	Meas.	Price.
Magnesium—			
Nitrate	lb.		$0.60
Sulphate	100 lbs.		.90
Manganese—Crude-pow'd 70@75% binoxide	lb.		.01¼@.01½
Crude, pow'd 75@85% binoxide	"		.01½@.02½
85@90% binoxide	"		.02½@.03¼
90@95% binoxide	"		.02¾@.03½
Carbonate	"		.16@.30
Chloride	"		.04
Ore, 50%, Foreign	unit		.26¾
Domestic	"		.30
Marble—Flour	sh. ton		6.00@7.00
Mercury—Bichloride	lb.		.77
Mica—N. Y. gr'nd. coarse	"		.03¼@.03¾
Fine	"		.04@.05
Sheets, N. C., 2x4 in	"		.30
3x3 in	"		.80
3x4 in	"		1.50
4x4 in	"		2.00
6x6 in	"		3.00
Scrap, f.o.b., Dillsboro, N. C.	sh. ton.		25.00
Mineral Wool—			
Slag, ordinary	sh. ton		19.00
Selected	"		25.00
Rock, ordinary	"		32.00
Selected	"		40.00
Monazite—92%	"		140.00
Nickel—Oxide, No. 1	lb.		1.00
No. 2	"		.60
Sulphate	"		.20@.21
Oils—Black, reduced 29 gr.: 25@30 cold test	gal.		.09¼@.09¾
15. cold test	"		.10¼@.10¾
Zero	"		.11¼@.12¼
Summer	"		.08¾@.09¼
Cylinder, dark steam ref	"		.08¼@.10¼
Dark filtered	"		.11¼@.15¾
Light filtered	"		.14½@.17¼
Extra cold test	"		.21¼@.26¼
Gasol ne. 86°@90°	"		.16@.21
Naphtha, crude 68@72°	bbl.		9.60
"Stove"	gal.		.12
Linseed, domestic raw	"		.56
Boiled	"		.58
Calcutta, raw	"		.85
Graphite, lubricating, Am. dry	lb.		.10
In oil	"		.12
Axle grease	"		.08½@.10
Wood grease	"		.05@.06
Ozokerite.	"		.10@.12
Paints and Colors—			
Chrome green, common	"		.05
Pure	"		.16
Yellow, common	"		.10¼
Best	"		.25
Silica Graphite, thick	"		.12
Thinned	gal.		1.15
Lampblack, com'l	lb.		.03
Refined	"		.07
Litharge, Am. powd.	"		.05½@.06
English flake	"		.08
Glassmakers	"		.07½
Metallic, brown	sh. ton		19.00
Red	"		16.00
Ocher, Am. common	"		9.25@10.00
Best	"		21.25@25.00
Dutch, washed	"		.04¾
French, washed	"		.01¼@.02½
Orange mineral, Am.	"		.07¾@.08
Foreign, as to make	"		.08½@.11½
Paris green, pure, bulk	"		.12½
Red lead, American	"		.06
Foreign	"		.07¾
Shellac, "D. C."	"		.30
Native	"		.15
Turpentine, spirits	gal.		.40½
Ultramarine, best	lb.		.25
Vermilion, Amer. lead	"		.10@.15
Quicksilver, bulk	"		.64
English, imported	"		.80
White lead, Am., dry	"		.05¾
English	"		.06½@.07¾
Whiting, common	100 lbs.		.42
Gilders	"		.54
Zinc white, Am., ex. dry	lb.		.04⅜@.04⅞
American, red seal	"		.06¾
Green seal	"		.07¼
Foreign, red seal, dry	"		.06½@.06⅝
Green seal, dry	"		.07¼@.09⅞
Potash—Caustic, ord	"		.04½@.05
Elect. (90%)	"		.06½
Potassium—			
Bicarbonate cryst.	"		.08¼
Powdered or gran.	"		.14
Bichromate, Am.	"		.06⅝
Scotch	"		.08½
Carbonate, hydrated	"		.04½
Calcined	"		.04
Chromate	"		.35
Cyanide (98@99%)	"		.27½@.28
Iodide, bulk	"		2.30
Permanganate, pure cr.	"		.11¼@.11½
Prussiate, yellow	"		.14⅝@.15¼
Red	"		.37
Silicate	"		.06
Sulphide, com'l	"		.10
Quartz—(See Silica).			
Rosin—			
Com. strained (280 lbs.)	bbl.		1.55
Best strained	"		3.30
Medium	"		1.90
Salt—			
N Y com. fine	sh. ton		2.00
N. Y. agricultural	"		1.50
Saltpeter—			
Crude	100 lbs.		3.50
Refined	"		4.25
Silica—Best foreign	lg. ton		10 00@11.00
Ground quartz, ord	sh. ton		6.00@8.00
Best	"		12.00@13.00
Lump quartz	"		2.50@4.00
Glass sand	"		2.75
Silicon—Carbide	lb.		.05

	Cust.	Meas.	Price.
Silver—			
Chloride	oz.		$0.65
Nitrate	"		.40
Oxide	"		.85@1.10
Slate—Ground, black	sh. ton		7.50@8.75
Ground, red and olive	"		20.00
Sodium—Acetate, com'l	lb.		.04¼
Bichromate	"		.06⅜
Chlorate, com'l	"		.09@.09¼
Hyposulphite, Am.	100 lbs.		1.80
German	"		2.00
Nitrite, 96@98%	lb.		.08
Peroxide	"		.45
Phosphate	"		.02½
Prussiate	"		.12½
Silicate, conc.	"		.05
com'l	"		.01
Sulphate, com'l	100 lbs.		.70
Gran., puri'd	lb.		.03
Sulphide	"		.01¾
Sulphite crystals	"		.02½
Tungstate, com'l	"		.35
Strontium—Nitrate	"		.08
Sulphur—Roll	100 lbs.		1.75
Flour	"		1.80
Flowers, sublimed	"		2.05
Talc—N. C, 1st grade	sh. ton		13.75
N. Y., Fibrous	"		8.00@9.00
French, best	100 lbs.		1.25
Italian, best	"		1.75
Tar—Regular	bbl.		2.00
Oil barrels	"		4.00
Tin—Bichloride	lb.		.09½@.10
Crystals	"		.22
Muriate, 36°	"		.09
52°	"		.15
Oxide, white, ch. pure	"		.40
Uranium—Oxide	"		2.25@3.00
Zinc—Metallic, ch. pure	"		.07¼@.09⅛
Carbonate	"		.15
Chloride	"		.05
Dust	"		.07¼@.07½
Sulphate	"		.02@.02¼

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust.	Meas.	Price.
Barium—Amalgam	grm.		$1.19
Electrol	"		5.71
Beryllium—Powder	"		5.95
Crystals	"		9.04
Nitrate (N Y.)	oz.		1.50
Boron—Amorphous, pure	grm.		.19
Crystals, pure	"		1.43
Nitrate (N. Y.)	lb.		1.50
Cadmium—Sticks	kg.		1.55
Sheets	"		2.83
Granulated	"		2 38
Powder	"		1.90
Calcium—Elect.	grm.		4.28
Cerium—Fused	"		2.02
Nitrate (N. Y.)	oz.		1.25
Chromium—Fused, Elect.	kg.		5.95
Pure powder 95%	"		1.79
Chem. pure cryst	grm.		.20
Cobalt—(98@99%)	kg.		6.66@8.33
Pure	"		30.94
Didymium—Powd.	grm.		3.81
Fused, Elect.	"		5.47
Nitrate (N. Y.)	oz.		2.50
Erbium	grm.		3.09
Nitrate (N. Y.)	oz.		2.50
Germanium—Powder	grm.		33.32
Fused	"		35.70
Glucinum—Powder	"		5.95
Crystals	"		9.04
Nitrate (N. Y.)	oz.		2.75
Indium	grm.		3.57
Iridium—Fused	"		1.07
Powder	"		.95
Lanthanum—Powder	"		4.28
Electrol, in balls	"		9.04
Nitrate (N. Y.)	oz.		2.25
Lithium	grm.		2.38
Nitrate (N. Y.)	oz.		.60
Magnesium—Ingot	kg.		6.19
In wire or ribbon	"		9.99
Powdered	"		5.95@7.14
Sheet	"		9.04
Molybdenum—Fused	grm.		.15
Powder, 95%	kg.		2.62
Niobium	grm.		3.81
Osmium	"		.94
Palladium—Wire	"		.86
Sponge	"		62
Potassium—In balls	kg.		17.85
Rhodium	grm.		2.38
Rubidium—Pure	"		4.76
Ruthenium—Powder	"		2.38
Rutile—Crude	kg.		.43
Selenium—Com'l powder	"		26 28
Sublimed powder	"		35.70
Sticks	"		28.56
Silicium—Com'l	"		28.56
Chem. pure crystals	"		59.50
Amorphous	"		27.36
Sodium (N. Y.)	lb.		.65
Strontium—Electrol	grm.		6.19
Tantalium—Pure	"		3.57
Tellurium—Ch. p. sticks.	kg.		107.00
Chem. pure powder	"		83.30
Thallium	"		26.18
Thorium—Nitrate 49@50% (N. Y.)	lb.		5.00
Titanium	kg.		47.60
Uranium	"		190.40
Nitrate (N. Y.)	oz.		.25
Wolfram—Fused, elect.	kg.		238.00
Powder, 95@98%	"		1.43
Chem. pure powder	"		6.43
Yttrium	grm.		3.33
Nitrate (N. Y.)	oz.		2.75
Zirconium—Com'l	kg.		119.00
Nitrate (N. Y.)	oz.		.75

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to Jan. 8. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.